

PROCHOROW, Mikolaj

Suspension of the bladder to the round ligament after total excision
of the uterus. Gin.polska 32 no.1:59-59 '61.

1. Z Kliniki Poloznictwa i Chorob Kobiecyh PAM w Szczecinie Kierownik:
prof. dr med. T. Zwolinski.

(HYSTERECTOMY) (BLADDER surg)

"APPROVED FOR RELEASE: 06/15/2000

CIA-RDP86-00513R001343110017-0

PROCHTOV, Ya.V.

The Asymptotic Behavior of the Binomial-Distribution. Uspechi Mat. Nauk⁸,
135-142 (1913).

APPROVED FOR RELEASE: 06/15/2000

CIA-RDP86-00513R001343110017-0"

DOMINICZAK, Konstanty; PROCHOROWA, Maria.

Interstitial plasma cell pneumonia in infants induced by the parasite *Pneumocystis carinii*. Polski tygod.lek. 11 no.1:
31-37 2 Jan 56.

1. Z Zakladu Anatomii Patologicznej PAM w Szczecinie: kierownik:
prof. dr Kazimierz Stojalowski i z Kliniki Chorob Dziecięcych
PAM w Szczecinie; kierownik: prof. dr Bolesław Gornicki.
Szczecin, ul. Noakowskiego 15 m 2.

(PNEUMONIA, in inf. and child.

interstitial plasma cell in inf., isolation of *Pneumocystis carinii*)

(PROTOZOAN INFECTIONS, in inf. and child

Pneumocystis carinii interstitial plasma cell pneumonia
in inf.)

"APPROVED FOR RELEASE: 06/15/2000

CIA-RDP86-00513R001343110017-0

PROCHUKHAN, D.P.

Sheeting in the rock basement of high dams. Sov. geol. 7 no. 7:
76-83 Jl '64.
(MIRA 17:11)

1. Institut Lengidroproyekt.

APPROVED FOR RELEASE: 06/15/2000

CIA-RDP86-00513R001343110017-0"

I 280151-66 EWT(m)/EWP(t)/ETI LJP(c) JI
ACC NR: AF6018094 (N)

SOURCE CODE: UR/0202/66/000/003/0029/0032

AUTHOR: Goryunova, N. A.; Mamayev, S. M.; Prochukhan, V. D.; Serginov, M.

ORG: Physicotechnical Institute, AN Turkmen SSR (Fiziko-tehnicheskiy institut AN Turkmeneskoy SSR)

TITLE: Solid solutions of the CdSnAs₂-CdGeAs₂ system

SOURCE: An Turkmen SSR. Izvestiya. Seriya fiziko-tehnicheskikh khimicheskikh i geologicheskikh nauk, no. 3, 1966, 29-32

TOPIC TAGS: semiconductor alloy, semiconductor research, solid solution, quaternary alloy, tin containing alloy, cadmium containing alloy, germanium containing alloy, arsenide

ABSTRACT: A series of alloys of the CdSnAs₂-CdGeAs₂ system have been synthesized and their crystal structure and certain physicochemical properties have been determined to detect the presumed formation of semiconductor solid solutions. Earlier, the Soviet authors prepared CdSnAs₂ and CdGeAs₂ single crystals with chalcopyrite structure, but solid solutions between these two compounds were unknown. All alloys were synthesized from high-purity elements in evacuated quartz ampuls by heating first at 600°C, then at 1100°C for a period of time. Homogeneous solid solutions were obtained over the entire composition range, as shown by the x-ray,

Card 1/2

L 28454-66

ACC NR: AP6018094

micrographic, and thermal analyses and by microhardness measurements. All the alloys had a chalcopyrite structure with lattice constant decreasing linearly from 6.092 to 5.94 \AA , with CdGeAs₂ content increasing from 0 to 100 mol %, i.e., the composition dependence of a obeyed the Vegard law. The plot of microhardness versus composition displayed a maximum for the alloy of 25 at% CdSnAs₂ and 75 at% CdGeAs₂, but neither thermal nor x-ray analysis confirmed the existence of any inclusions. The phase diagram of the system is characteristic of a continuous series of homogeneous solid solutions. Orig. art. has: 3 figures and 1 table. [JK]

SUB CODE: 20/ SUBM DATE: 03Dec65/ ORIG REF: 003/ OTH REF: 002/ ATD PRESS:
5005

Card 2/2 LC

ACC NR: AR6030494

SOURCE CODE: UR/0275/66/000/006/B014/B014 /

AUTHOR: Goryunova, N. A.; Baranov, B. V.; Grigor'yova, V. S.; Kradinova, L. V.;
Kryukova, I. V.; Prochukhan, V. D.

TITLE: Production and investigation of GaP--GaAs and GaAs--InAs solid solutions

SOURCE: Ref. zh. Elektronika i yeye primeneniye, Abs. 6B93

REF SOURCE: So. Simpozium. Protsessy sinteza i rosta kristallov i plenok
poluprovodnik. materialov, 1965. Tezisy dokl. Novosibirsk, 1965, 7-8

TOPIC TAGS: single crystal growing, semiconductor crystal, solid solution

ABSTRACT: Single crystals from solid solutions of GaP--GaAs and GaAs--InAs systems were grown by the method of gas-transport reactions in a closed space. Effects of vaporization-zone temperature, crystallizer temperature, temperature difference between the cold and hot zones, geometric factors, and chemical nature were investigated. Also the problems of crystal doping in gas-transport reactions were clarified. GaP--GaAs and GaAs--InAs single crystals were produced in a wide concentration range. Optimal conditions for producing single crystals of desirable habitus were found. A possibility of doping single crystals in the gas-transport reaction was found. Some electric properties of single crystals were measured.
N. G. and others. [Translation of abstract]

SUB CODE: ~~20~~ 20
Card 1/1

UIC: 621.315.592.4:541.412

L 4506146... EXP(44) DRAFT (100% REDUCED)

ACC-NR: AP6030610

(A,N)

SOURCE CODE: UR/0413/66/000/016/0101/0101

INVENTOR: Goryunova, I. A.; Baranov, B. V.; Prochukhan, V. D.

ORG: none

TITLE: A method of growing boron-phosphide single crystals. Class 40, No. 185087
[announced by the Physicotechnical Institute im. A. F. Ioffe (Fiziko-tehnichesklyy
institut)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 16, 1966, 101

TOPIC TAGS: single crystal growing, boron, phosphide, single crystal, boron phosphide
crystal growing

ABSTRACT: This Author Certificate introduces a method of growing boron-phosphide
single crystals. Growing seeds at lowered temperature of the melt is combined with
growing single crystals from the seeds at a temperature gradient in the melt. In
order to obtain single crystals large enough for practical use, the crystals are
grown in a BP-Cu₃P-system melt. [WW]

SUB CODE: 11/ SUBM DATE: 08Mar65/ ATD PRESS: 5076

UDC: 546.181.1

Card 1/1 MT

L 40108-66 EWP(e)/EWT(m)/T/EWP(t)/ETI IJP(c) WH/WW/JD/JG

ACC NR: AR6020536

SOURCE CODE: UR/0081/66/CCC/003/B044/B044

AUTHOR: Baranov, B. V.; Grigor'yeva, V. S.; Kradinova, L. V.; Prochukhan, V. D.

TITLE: Ternary chalcogenides^{IV} of type A^{II}B₂^{III}C₄^{IV}

SOURCE: Ref zh. Khim, Part I, Abs. 3B321

REF SOURCE: Sb. Fizika. Dokl. k XXIII Nauchn. konferentsii Leningr. inzh.-stroit. in-ta, L., 1965, 48-49

TOPIC TAGS: zinc compound, gallium compound, cadmium compound, indium compound, sulfide, crystallization

ABSTRACT: The possibility of obtaining crystals of ternary chalcogenides of type A^{II}B₂^{III}C₄^{VI} (I) having a definite size and habit was investigated. Methods of gas transport reactions and recrystallization from solutions were employed. Coarse crystals of ZnGa₂S₄ and CdIn₂S₄ were obtained. The influence of group VI elements on the transport and shape of the crystals was determined; it was found that the addition of Te impurities leads to a more perfect faceting and to coarser crystals. It is shown that I can be recrystallized from salt melts containing the same component B.
S. Rykova. [Translation of abstract]

SUB CODE: 07

Card 1/1 *all*

ZHURAVLEVA, T.B.; NEVOROTIN, A.I.; PROCHUKHANOV, R.A.; PRYANISHNIKOV, V.A.;
KHARITONOV, L.V. (Leningrad)

Changes in the hypophysial-adrenal system in disorders of the
balance of sex hormones; experimental study. Arkh. pat. 27
no.11:20-29 '65. (MIRA 18:12)

1. Kafedra patologicheskoy anatomi (zav. - prof. M.A.
Zakhar'yevskaya) I Leningrad'skogo meditsinskogo instituta
imeni I.P.Pavlova. Submitted February 14, 1964.

Prochorov, A.V.

CZECHOSLOVAKIA/Chemical Technology. I-25

Chemical Products and Their Application--
Wood chemistry products, Cellulose and its
manufacture. Paper.

Abs Jour: Ref Zhur-Khimiya, No 3, 1957, 10035

Author : Prochorov, A.V.

Inst : Not Given

Title : Equipment for the Rapid Determination of the
Moisture Content of Chips

Orig Pub: Papir a celulosa, 1955, Vol 10, No 11, 241 (in
Czech)

Abstract: Translation. See RZhKhim, 1956, 20973.

Card 1/1

PROCHOROVA M. I.

6677. PROCHOROVA M. I. Role of pyruvic acid in the animal organism Uspjechi
Savremennoi Biologiyi, Moscow 1949, 28/2(5) (266-284)

Various aspects of pyruvic acid metabolism under aerobic and anaerobic conditions
are discussed in the Russian language. 114 references. Fuka - Zagreb

SO: Excerpta Medica, Section II, Vol III, No 12

PROCHOROW, Maria

Effect of thiamine on the level of pyruvic and lactic acids in the blood and cerebrospinal fluid of children with epilepsy. Roczn. pom. akad. med. Swierczewski. 8:415-437 '62.

1. z II Kliniki Pediatrycznej Pomorskiej Akademii Medycznej Kierownik:
prof. dr med. Boleslaw Gornicki.
(THIAMINE) (PYRUVATES) (LACTATES) (EPILEPSY)
(CEREBROSPINAL FLUID) (BLOOD CHEMICAL ANALYSIS)

PROCHOROW, Maria

16 JUL 1967

Kiev, Medical Library, Vol. XVII, Series II, No. 5, 1967.

- 242
243
1. "Pathogenesis of the Influence of Infective Fever on Immune Diseases," Graduate Seminar of the Institute of General Pathology of the Academy of Medical Sciences, director Prof. M. I. LAVRENT'YEV, pp. 205-208.
 2. "Evaluation of Laboratory Research in Auto-Rheumatoid Disease," Ann. INSTITUTE OF MEDICAL SCIENCES, pp. 209-211.
 3. "Autoreactions in Oral Tumors of Fraction Origin," Attacking Pathology by the Striated Spleen in the Study of Glaucoma, Dr. V. N. KARAEV and G. B. BUKHANOV, of the All-Soviet Academy of Medical Sciences, Institute of Ophthalmology, Moscow, pp. 212-213.
 4. "Periorbital Treatment of Surgeon's Disease and Other Facial Vesicle, Constituting Diseases of Naso-Oral and Periorbital Areas," Vestn. ROZDOL'NOV, pp. 213-217.
 5. "The Facial Vesicle in Patients with Endemic Hepatitis," Moshchuk, Director of the Department of Infectious Diseases of the City Hospital, Physician (Ordinarius); S. S. KUDRIATSEV, Physician; V. S. ZUBOV, Physician (Ordinarius); N. N. ZAKHAROV, Hospital Director, Dr. K. CHIKALENOK, pp. 217-219.
 6. "An Essay on the Graphic Representation of a 'Molephant,'" Jevgenij S. SOKOLOV, of the Academy of Medical Sciences, Kiev, Ukraine, A. M. KARPOVSKA, Ed., pp. 219-222.
 7. "Allergy in Viral Diseases," Barbara KELLOGG, Director of the Clinic of Children's Diseases, Children's Hospital, Kiev, Ukraine, pp. 223-224.
 8. "Two Cases of Turner's Syndrome," Maria PROKOPENKO, of the Second Pediatric Clinic of the Kiev Medical Institute, director Prof. V. V. KLEINER, pp. 225-226.
 9. "Two Cases of Turner's Syndrome," V. V. KLEINER, director Prof. V. V. KLEINER, pp. 225-226.
- [] Boleslaw GORIŃSKI, pp. 224-225.

PROCHOROW, Maria (Szczecin)

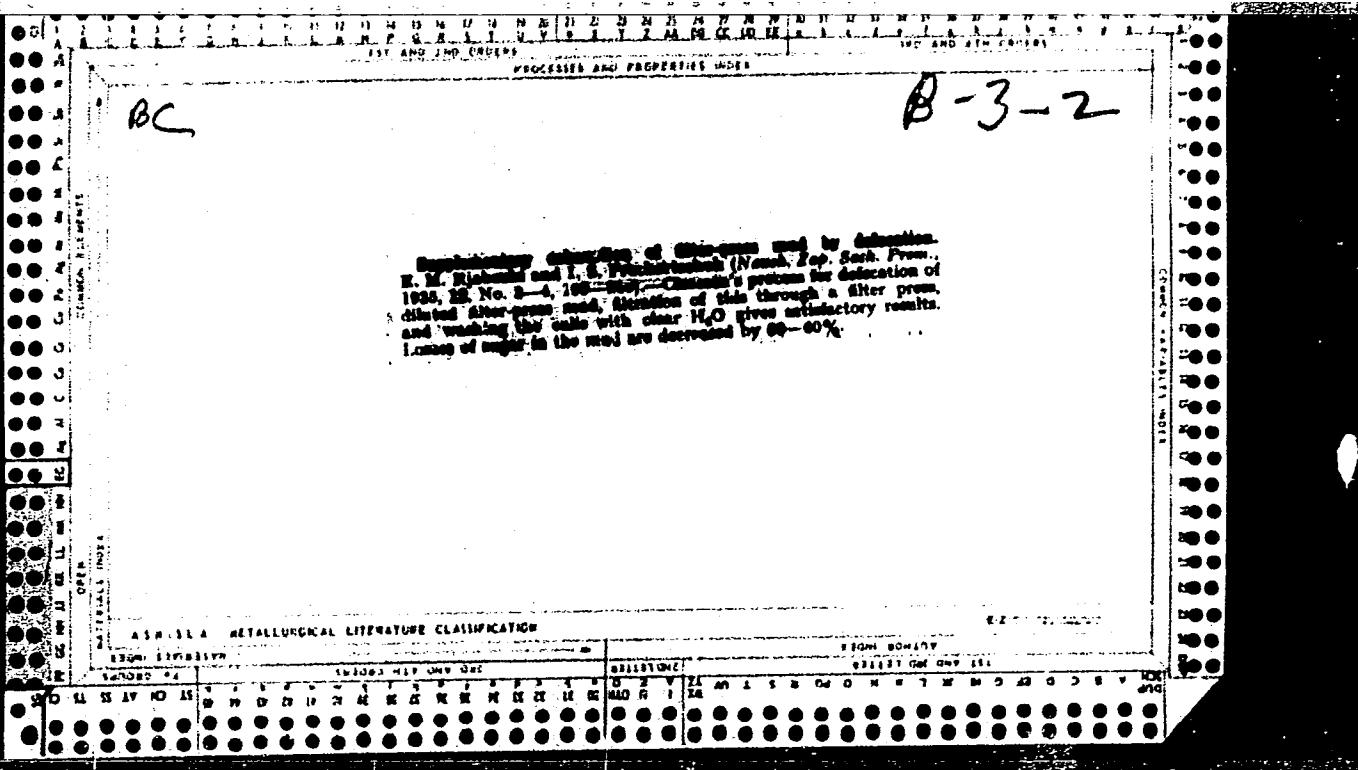
Administration of hydrocortisone into the canal in the treatment of
cerebrospinal meningeal tuberculosis. Grunica 29 no.1: 87-89 Ja '61.

(TUBERCULOSIS MENINGEAL ther)
(HYDROCORTISONE ther)

PROCHOROW, Mikolaj

Suspension of the urinary bladder in round ligament of the uterus
after total hysterectomy. Gin.polska 32 no.1:59-69 Ja-F '61.

1. Z Kliniki Poloznictwa i Chorob Kobiecych PAM w Szczecinie Kierownik:
prof. dr med. T.Zwolinski.
(HYSTERECTOMY) (BLADDER surg)



PTA

1486

634.963.3 : 674.031.632.22 : 625.142

Prochownik S. Impregnation Processes of Beechwood Railway
Sleepers with Special Reference to Treatment of Frost Damaged
Wood.

"Podklady bukowe w kolejnictwie oraz sposoby ich nasycania
z uwzglednieniem tzw. zamrozi". Sylwan. No. 3—4, 1961, pp. 343—357.
4 figs.

Advantageous features of beechwood sleepers in comparison
with those made of other wood. Durability of treated beechwood.
Classification of sleepers. Impregnation processes and preservatives

used. Impregnation of frost damaged wood. Survey of research on
frost damaged beechwood. Directions relating to the manufacture
and use of beechwood sleepers.

"APPROVED FOR RELEASE: 06/15/2000

CIA-RDP86-00513R001343110017-0

PROCHOWSKI, Zdzislaw

Attempt at evaluating the achievements in spatial studies on
the industry in People's Poland. Przegl geogr 36 no. 2:22/-
244 '64.

APPROVED FOR RELEASE: 06/15/2000

CIA-RDP86-00513R001343110017-0"

CP
PROCHUKHAN, D.P.

Geochemistry of "vapps." A. M. Kurmetsov and D. P. Prochukhan. *Compl. rend. acad. sci. U. R. S. S.* **26**, 325-9 (1940) (in English).—Certain variegated rocks in the lower portion of the Kazan stage deposits (Perm-Kama region) known as "vapps," and notable by their instability when losing natural moisture, contain SiO₂ 49.39, Al₂O₃ 13.94, Fe₂O₃ 8.26, CaO 8.32, MgO 5.25, MnO 0.31, K₂O 1.61, Na₂O 1.54, SO₃ 0.46, CO₂ 8.16, heat losses 2.50%, CaCO₃ 14.31, MgCO₃ 3.58 and CaS_{0.2}H_{0.9} 0.91%. The vapps contain gypsum in quantities of about 0.91% and disseminated in small grains invisible to the naked eye, though in places it is concentrated in individual flat crystalline segregations (lenses) up to 3-5 cm. in size. The vapps present a highly disperse mass of argillaceous particles cemented with CaCO₃ and formed under continental littoral conditions. 8 references. A. H. Krappé

AS-SEA METALLURGICAL LITERATURE CLASSIFICATION

P.P.
P.

PROBLEMS AND PROSPECTS WORK

The formation of columnar calcite. A. M. Kuznetsov
and D. P. Prochukhan. *Compt. rend. acad. sci. U.R.S.S.*
48, 387 (1945) [in English]. The calcite streaks, from
1 to 25 cm. thick, lie parallel to the beds in a 10-m. series
of clays of marls in the Upper Kungurian clay-marly facies
of the western part of the Neat Ural. Verchne-Vuchche,
Chussekae Gorodki, the Shakva River. Internally the
columnar calcite resembles fossilized wood, and consists
of columnar crystals of varying thickness, grown together
to form a monolithic rock. The color ranges from light to
yellow, pink, bluish to brown, and dark gray, depending on
the quantity and dispersion of solid admixts. The us were
 $\omega = 1.66$; $e = 1.48$; sp. gr. 2.60-2.70; hardness 3-4. The
layers of columnar calcite were the result of a periodically
arising biogenic process which went on under conditions
of a supply of comparatively pure solns. of CaSO_4 , org
matter—the source of energy of the biogenic process,
during the periods of sharply reduced elastic materials.
John F. Hurst
Chem. analyses are given

PROCHUKHAN, D.P.

Significance of longitudinal profiles of river valleys for
prognostication in engineering geology. Sov. geol. 3 no. 9:113-121
(MIRA 13:11)
S '60.

1. Leningradskoye otdeleniye instituta Gidroenergoprojekt.
(Engineering geology)

247700 (1043, 1137, 1138)

34753

S/020/62/142/003/020/027
B101/B110

AUTHORS: Goryunova, N. A., Mamayev, S., and Prochukhan, V. D.

TITLE: Some properties of the semiconductor CdSnAs_2 , an electronic analog of indium arsenide

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 142, no. 3, 1962, 623-626

TEXT: On the basis of data for the width of the forbidden band and the microhardness it was concluded that the chemical bond was more covalent in CdSnAs_2 than in InAs ($\text{InAs}:\Delta E = 0.45 \text{ ev}$, $H = 330 \text{ kg/mm}^2$; $\text{CdSnAs}_2:\Delta E = 0.26 \text{ ev}$, $H = 395 \text{ kg/mm}^2$). Hence follows a higher mobility of current carriers in CdSnAs_2 as compared with InAs. An improved method of synthesizing CdSnAs_2 was used to prove these assumptions. [Abstracter's note: Method not stated.]

The authors obtained monolithic, polycrystalline specimens (grain size: a few millimeters) as well as single crystals (a few centimeters long) of a cross section of $\sim 0.25 \text{ cm}^2$. Their homogeneity was confirmed by the constant microhardness and electrical conductivity, as well as by the Debye-Scherrer patterns, the homogeneous

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S/020/62/142/003/020/027
Some properties of the semiconductor... B101/B110

structure of single crystals was confirmed by Laue diffraction patterns. The melting point was 615°C . The Hall effect R (at 6700 oersteds) and the electrical conductivity σ were measured between 77 and 840°K . The following was found: (1) σ is independent of temperature in the range of 77 - 280°K . With increasing temperature, σ passes a minimum and then rises, following an exponential function. The minimum for an inhomogeneous polycrystal (A) was at 550°K , for a monolithic polycrystal (B) at 370°K , and for a single crystal (C) at 365°K . (2) At room temperature, σ was $2.5 \cdot 10^2 \text{ ohm}^{-1} \cdot \text{cm}^{-1}$ for A, $3.4 \cdot 10^2$ for B, and $4.1 - 3.1 \cdot 10^2$ for C. (3) The mobility n of current carriers ($n = R\sigma$) was (in $\text{cm}^2/\text{v.sec}$): 1000 for A, 5800 for B, and 18,000 - 22,000 for C. (4) The sign of Hall coefficient and thermo-emf showed electronic conductivity for all specimens. (5) Accordingly, the compound CdSnAs_2 is a semiconductor with higher n values than in any known ternary compound; the n values are even a little higher than for InAs. The n value for CdSnAs_2 is reduced by impurities; it can be elevated by improved purification. CdSnAs_2 offers good prospects for practical use as semiconductor. D. N. Masledov is thanked

Card 2/3

S/020/62/142/003/020/027
Some properties of the semiconductor... B101/B110

for a discussion. There are 3 figures, 2 tables, and 6 references: 2 Soviet and 4 non-Soviet. The three references to English-language publications read as follows: C. H. L. Goodman, Nature, 179, 828 (1957); A. J. Strauss, A. J. Rosenberg, J. Phys. Chem., Sol., 17, 289 (1961); H. Pfister, Acta Crystallogr., 11, 221 (1958).

ASSOCIATION: Fiziko-tekhnikheskiy institut im. A. F. Ioffe Akademii nauk SSSR (Physicotechnical Institute imeni A. F. Ioffe of the Academy of Sciences USSR)

PRESENTED: September 2, 1961, by A. N. Frumkin, Academician

SUBMITTED: September 30, 1961

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+

Card 3/3

Effect of disturbance of short-range order on the electrical properties of solid solutions with tetrahedral structure of distribution of atoms.
D. I. Tret'yakov.

Some electrical properties of solid solutions in the system AgInTe₂-2InSb. S. M. Mamayev, V. D. Prochukhan.
(Presented by D. I. Tret'yakov--15 minutes).

(Paper not presented).]

Investigation of thermally stimulated current in vitreous Tl₂Se·As₂Te₃.
A. M. Andriyash, B. T. Kolomiyets.

Measurement of the mobility of current carriers in vitreous chalcogenide semiconductors. I. B. Ivkin, B. T. Kolomiyets, E. A. Lebedev.

Oxychalcogenide Glasses. B. T. Kolomiyets, V. P. Shilo.
(Presented by B. T. Kolomiyets--20 minutes).

Report presented at the 3rd National Conference on Semiconductor Compounds,
Kishinev, 16-21 Sept 1963

GORYUNOVA, N.A.; PROCHUKHAN, V.D.

Solid solutions in quaternary systems on the basis of InAs
and InSb. Fiz. tver. tela 2 no.1:176-178 Jan '60. (MIRA 14:9)

1. Leningradskiy fiziko-tehnicheskiy institut AN SSSR.
(Solutions, Solid) (Indium arsenide)
(Indium antimonide)

GORYUNOVA, N.A.; MAMAYEV, S.; PROCHUKHAN, V.D.

Certain properties of the CdSnAs₂ semiconductor, and electron
analog of indium arsenide. Dokl. AN SSSR 142 no.3:623-626 Ja
'62. (MIRA 15:1)

1. Fiziko-tehnicheskiy institut im. A.F.Ioffe AN SSSR. Predstavleno
akademikom A.N.Frumkinyem.
(Semiconductors) (Indium arsenide)

GORYUNOVA, N.A.; VOYTSEKHOVSKIY, A.V.; PROCHUKHAN, V.D.

Possibility of forming solid solutions in some four-component systems.
Vest.LGU) no.10:156-158 '61. (MIRA 14:5)
(Solutions, Solid)

L 12105-66 EWT(1)/EWP(e)/EWT(m)/EWP(t)/EWP(b) LJP(c) JD
ACC NR: AP6001663 SOURCE CODE: UR/0051/65/019/006/0987/0989

AUTHOR: Baranov, B. V.; Oksman, Ya. A.; Prochukhan, V. D.; Smirnov, V. N.

ORG: none

TITLE: High-frequency electroluminescence of polycrystalline boron phosphide

SOURCE: Optika i spektroskopiya, v. 19, no. 6, 1965, 987-989

TOPIC TAGS: electroluminescence, boron compound, phosphide, crystal property

ABSTRACT: The authors note that the use of high-frequency excitation of electroluminescence is of particular interest in the study of high-temperature crystals of the type A_3B_5 , since the quality of the crystals and technological difficulties often make it difficult to obtain p-n junctions on these crystals, with the result that observation of injected electroluminescence is complicated. Such material includes, in particular, boron phosphide, information on the properties of which is as yet extremely limited. A study was made of the high-frequency electroluminescence of BP in order to determine and assess methodological possibilities and to obtain information regarding emission-related processes taking place in this material. It was determined that BP dissolves in a Cu_3P melt. The basic admixtures in the BP crystals were Cu and Si, with traces of Cr and Mg. Figures are given illustrating the dependence of the integral intensity of electroluminescence on the amplitude of the HF field intensity, averaged

21, 44, 15
Z UDC: 535.376

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L 12105-66
ACC NR: AP6001663

for volume, and also the spectral distribution of HF electroluminescent emission. Observations of photoconductivity by a no-contact method revealed that the set-up time of photocurrent in the samples considered was in the order of several seconds, indicating a high concentration of traps. Orig. art. has: 2 figures.

SUB CODE: 07, 20 / SUBM DATE: 19May65 / ORIG REF: 002 / OTH REF: 003

Card 2/21

L 01050-67 EWT(1)/EWT(m)/T/EWP(t)/FTI IJP(c) JD

ACC NR: AP6030961 SOURCE CODE: UR/0181/66/008/009/2623/2627

52

51

B

AUTHOR: Belle, M. L.; Alferov, Zh. I.; Grigor'yeva, V. S.; Kradinova, L. V.;

Prochukhan, V. D.

ORG: Physicotechnical Institute im. A. F. Ioffe AN SSSR, Leningrad (Fiziko-tehnicheskoy institut AN SSSR)

TITLE: Optical reflection of gallium phosphide and gallium arsenide and their solid solutions

27 27

27

SOURCE: Fizika tverdogo tela, v. 8, no. 9, 1966, 2623-2627

TOPIC TAGS: gallium arsenide, gallium, optical reflection, gallium phosphide, doublet structure, ultraviolet region structure, spin orbital, splitting

ABSTRACT: An analysis is made of the optical reflection of GaP, GaAs, and their solid solutions in the 2.0—5.0 ev region at 100 and 290K. A doublet structure was detected in the ultraviolet region of the spectrum, which shifts linearly with changes in composition. Satisfactory agreement in the distance between double components and corresponding values, determined from infrared absorption, make it possible to ascribe this doublet to the spin-orbital splitting of the $t_{1\alpha}$ valency band at the Γ .

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L 01050-67

ACC NR: AP6030961

point, the corresponding transition in this case being $\Gamma_{15} \rightarrow \Gamma_{15}(E'_0)$ -- the transition from the upper valency band to the second conductivity band. For GaAs we then have $E'_0 = 4.46$ ev, $\Delta_0 = 0.32$ ev, and for GaP, $E'_0 = 4.68$ ev, $\Delta_0 = 0.125$ ev (T = 290K). The shift in the doublet $A_3 \rightarrow A_1$ occurs linearly with a break. The doublet structure, which becomes less distinct as the content of GaP increases, is observed as far as the composition $\text{GaP}_{0.7}\text{As}_{0.3}$. Apparently, corresponding transitions occur at various points of the Λ branch for GaP and GaAs (direction [111] in the Brillouin zone). The author thanks Ye. F. Gross for his interest in this work. Orig. art. has: 1 table, and 3 figures. [Authors' abstract] [SP]

SUB CODE: 20 / SUBM DATE: 17Jan66 / ORIG REF: 001 / OTH REF: 009 /

awm
Card 2/2

L 08354-67 EWT(m)/EWP(w)/EWP(t)/ETI IJP(c) JD

ACC NR: AR6028126

SOURCE CODE: UR/0058/66/000/005/A069/A069

AUTHOR: Goryunova, N. A.; Baranov, B. V.; Grigor'yeva, V. S.; Kradinova, L. V.;
Kryukova, I. V.; Prochukhan, V. D.

TITLE: Production and investigation of GaP-GaAs and GaAs-InAs solid solutions

SOURCE: Ref. zh. Fizika, Abs. 5A557

REF. SOURCE: Sb. Simpozium. Protsesy sinteza i rosta kristallov i plenok
poluprovodnik. materialov, 1965. Tezisy dokl. Novosibirsk, 1965, 7-8

TOPIC TAGS: solid solution, gallium compound, indium compound, single crystal growing
crystal impurity

ABSTRACT: The possibility is investigated of obtaining single crystals of homogeneous
solid solutions in a wide range of concentrations. The crystals were grown by the
gas-transport method in a closed volume. The authors elucidate the influence of such
factors as the zone temperature, the temperature difference between zones, and the
chemical nature of the carrier, and its concentration on the evolution of the gas-
transport reactions and on the habit and dimension of the crystals are clarified.
Optimal conditions are established for obtaining single crystals of the required habit.
Questions involved in the doping of crystals during gas-transport reactions are
studied. A. Povotikov. [Translation of Abstract]

SUB CODE: 20
Card 1/1 not

PROCHUKHANOV, K.Z.

Bee Culture

"Stopping the output of waste honey." Pchelovodstvo, 29, No. 5. 1952

9. Monthly List of Russian Accessions, Library of Congress, August ¹⁹⁵³ 1953, Uncl.

PROCHUKHAYEV, V.G.; CHERKASOV, R.S., dots., red.

[Raising the standards of teaching and the quality of student knowledge in mathematics] O povyshenii urovnia prepodavaniia i kachestva znanii uchashchikhsia po matematike; posobie dlia studentov pedagogicheskikh institutov i uchitelei matematiki. Moskva, Mosk. gos.ped.in-t im. V.I.Lenina, 1963. 190 p. (MIRA 16:12)
(Mathematics--Study and teaching)

PROCHUKHAYEV, V.G.

Organization of mathematical and industrial excursions in general
education secondary schools. Uch. zap. MGPI 151;3-17 '60.
(MIRA 16:5)

(Industry and education)
(Mathematics--Study and teaching)

"APPROVED FOR RELEASE: 06/15/2000

CIA-RDP86-00513R001343110017-0

PROCHUNIAYEV, V.G.

Calculations by tables in arithmetic classes of secondary schools.
Uch. zap. MGPI 116:157-166 '58. (MIRA 12:9)
(Arithmetic)

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CIA-RDP86-00513R001343110017-0"

BEREZANSKAYA, Ye.S. (Moskva); SHOR, Ya.A. (Moskva); PROCHUKHAEV, V.G.
(Moskva).

"Arithmetic textbook" by I.N. Shevchenko. Reviewed by E.S. Bere-
zanskaya, I.A. Shor, V.G. Prochukhaev. Mat. v shkole no.4:39-46
8-9 '57. (MIRA, 10:8)
(Arithmetic) (Shevchenko, I.N.)

PRCCHZKA, V.; VICKOVA, Z.; SUNDERHAUF, F.

Percentage of sulfur during combustion of inferior lignite in boiler units.
p. 198

PALIVA. (Ministerstvo paliv a Ceskoslovendka vedecka technicka spolecnost
pro uyuuziti paliv pre Ceskoslovanska adademii ved) Praha, Czechoslovakia
Vol. 39, no. 6, June 1959

Monthly list of East European Accessions (EEAI) LC, vol.9, no. 1,
Jan. 1960

Uncl.

PROCJASKI, Jan, inz.

Influence of the storing conditions upon the durability of
prefabricated materials. Budown Wiejskie 14 no.4;25-26 Ap '62

1. Instytut Techniki Budowlanej, Białystok.

MAY, Josef, inze.; PROCKE, Jiri

Development of new rectifiers for arc lamps used in projection apparatus. Tech praca 14 no.9:765-768 S '62.

1. Vyvoj usmernovacu, Elektropristroj, n.p., Modrany

CA

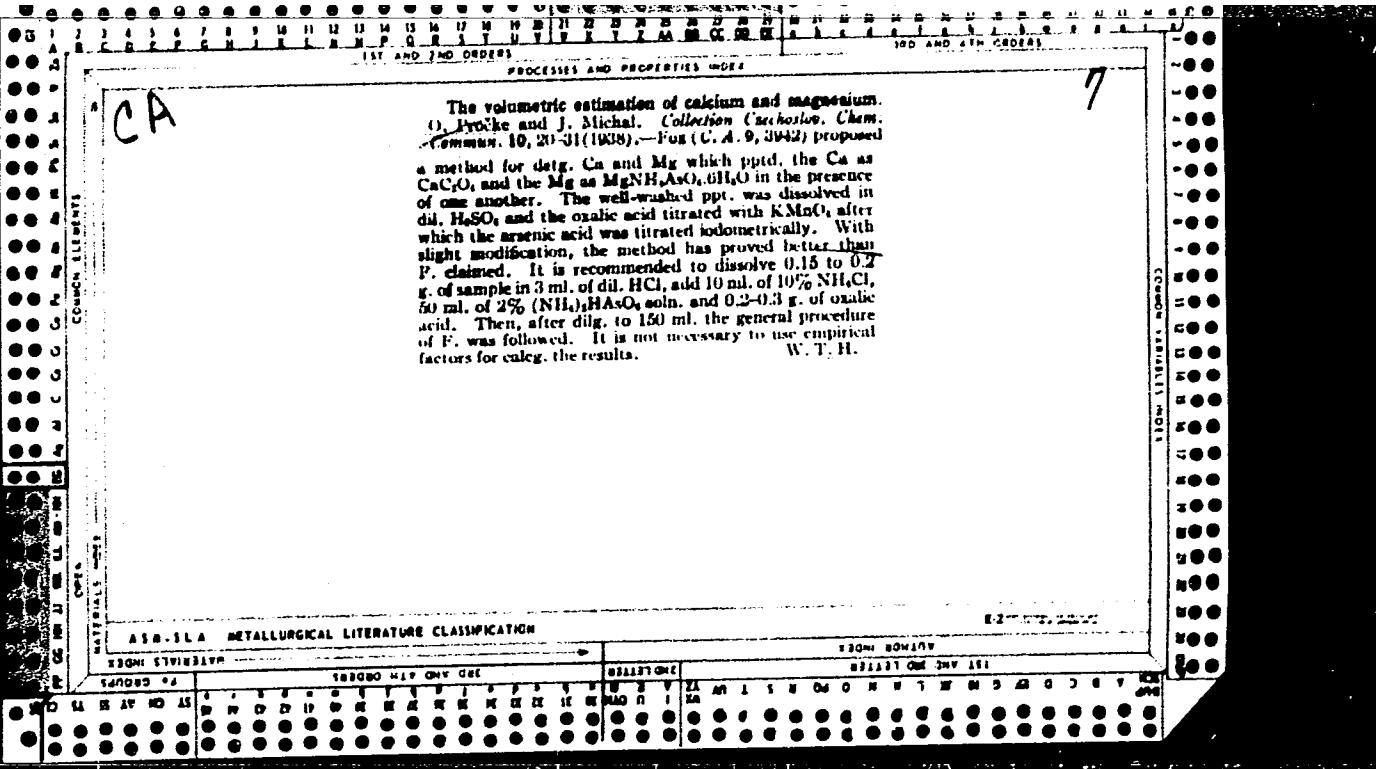
Kalization of lithium as lithium potassium ferric peroxide.
Date: Dec-Procke and A. Stout. Collection Czech Chem Commun. 11, 273-94(1939).—P. and Uzel, C. A. 32,

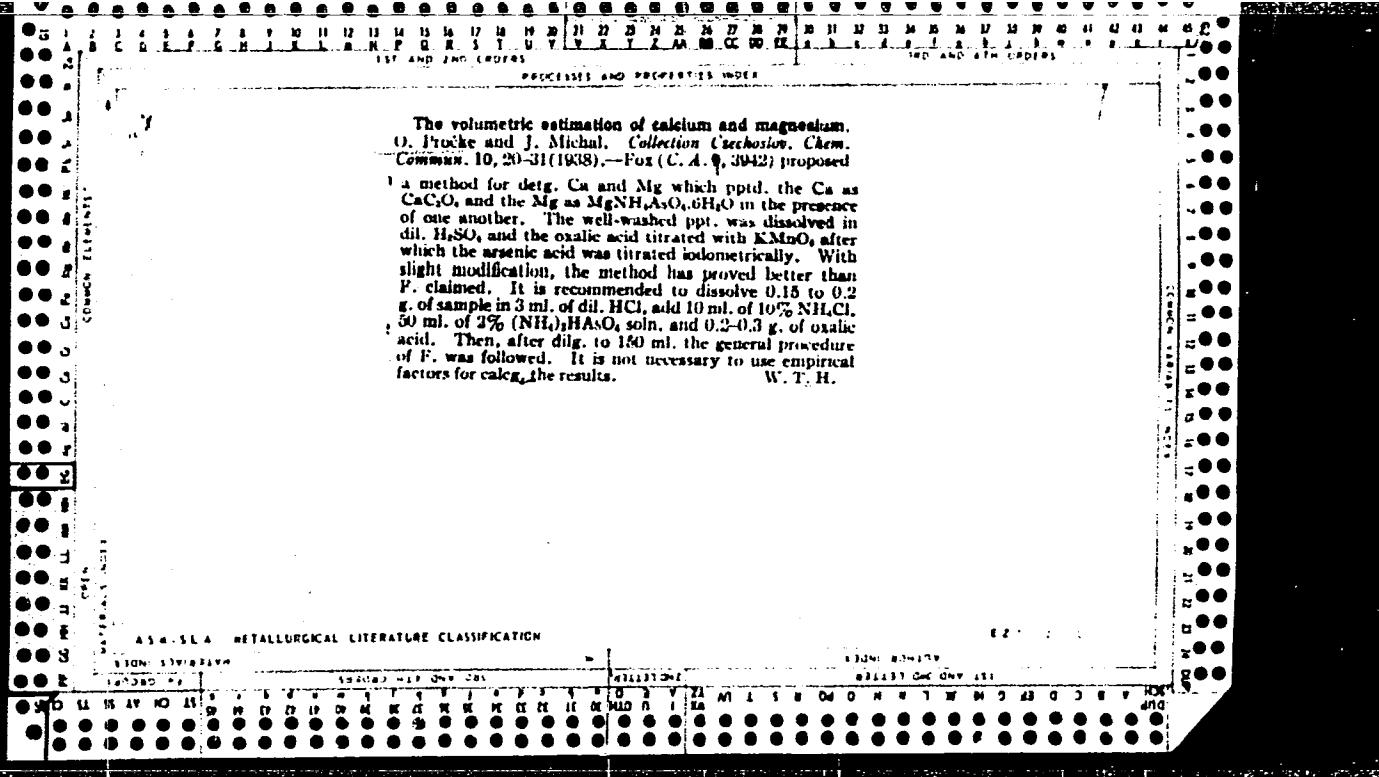
5320, showed that Li can be ppzd. as LiKFeO_4 . In this paper the best conditions for carrying out the quant. pptn were detd., and the best way to det. Li in the presence of Na. To carry out the analysis, evap the soln contg. the chlorides or sulfates of Na and Li to about 1 ml. In the tests, the Li content varied from 0.07 to 3.5 mg. To remove the Na, treat the soln with EtOH which has been satd. with HCl. Remove the NaCl and wash the ppt. 3 times with 2-ml. portions of the alc. soln of HCl. Evap. the filtrate contg. the Li to about 1 ml. and make about 1.0 N in KOH. While stirring and heating to 80° slowly add the reagent. It is ppzd. from 2.3 g. of KIO_4 , 10 ml. of 2 N KOH, 2 ml. of 2 N BaCl₂ soln, 40 ml. of 2 N KOH and water to make 100 ml. When all the Li has been ppzd. and the supernatant liquid is clear, filter and wash the ppt. of LiKFeO_4 with 0.25 N KOH soln. Dissolve the washed ppt. in dil. H_2SO_4 , add KOH till neutral and then just enough acid to clear the soln. Add an excess of KI and after some time add NaHCO_3 and titrate the liberated I₂ with standard arsenite or thiosulfate soln. Seven equiv. of I₂ correspond to 1 atom of Li.

W. F. H.

AIB-SLA METALLURGICAL LITERATURE CLASSIFICATION

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Ch

Volumetric determinations in strongly alkaline solu-
tions. IV. Titration of arsenic, antimony, selenium and
tellurium with permanganate. O. Tomíček, O. Proké
and V. Pavláka. Collection Czech. Chem. COMMUN. 11,
449-58 (1936); cf. C. A. 30, 9827. — Direct titration of
arsenite to arsenate in approx. 0.25 N NaOH can be ac-
complished with KMnO₄ provided 0.3 g. of telluric acid
is added for each milliequiv. of As present; the MnO₄⁻ is
reduced to the quadrivalent state but there is no pptn.
when the H₂TeO₄ is present. The end points of all the
procedures described in this paper were detd. potenti-
metrically. A soln. of 25 ml. of 0.02 N KMnO₄ + 16
ml. of 2.5 N NaOH dild. to about 90 ml. can be titrated
with 0.1 N arsenite soln. Sb in the trivalent state behaves
like arsenite. Direct titration of selenite in alk. soln. with
KMnO₄ was unsuccessful but approx. values were ob-
tained as follows: To 10 ml. of approx. 0.1 N selenite soln.
add 15 ml. of 2.5 N NaOH and 30 ml. of 0.02 N KMnO₄.
Place the beaker in boiling water for a few min. and then
titrate the excess KMnO₄ with 0.1 N arsenite soln. A
direct titration of quadrivalent Te to the hexavalent state
can be accomplished in alk. soln. and the MnO₄⁻ is re-
duced to the quadrivalent state. A mixt. of selenite and
tellurite can be analyzed by first titrating the Te, then
adding excess KMnO₄ and detg. the excess as above.
Most of the analytical data appears to be somewhat
less accurate than is usually obtained by KMnO₄ titrations
in the presence of dil. acids. W. T. H.

7

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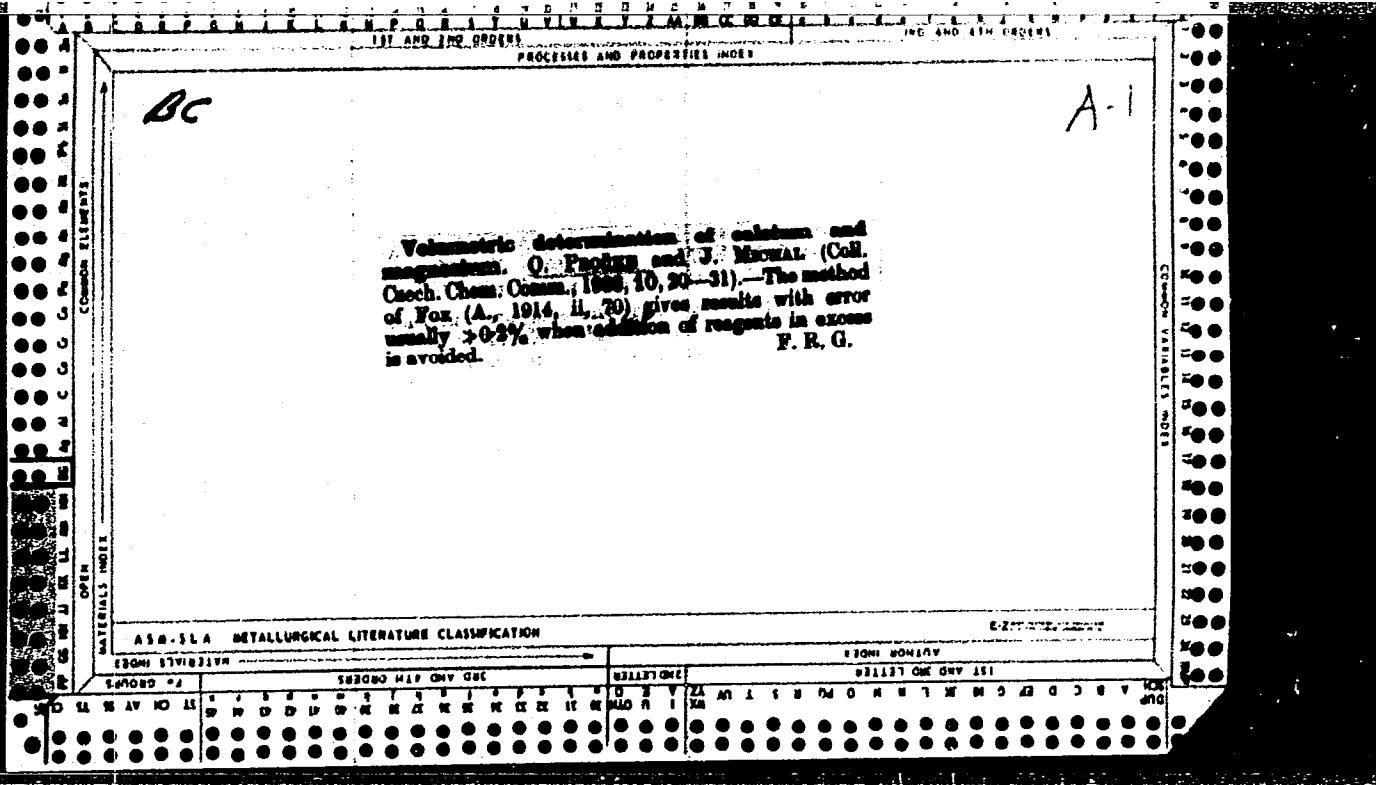
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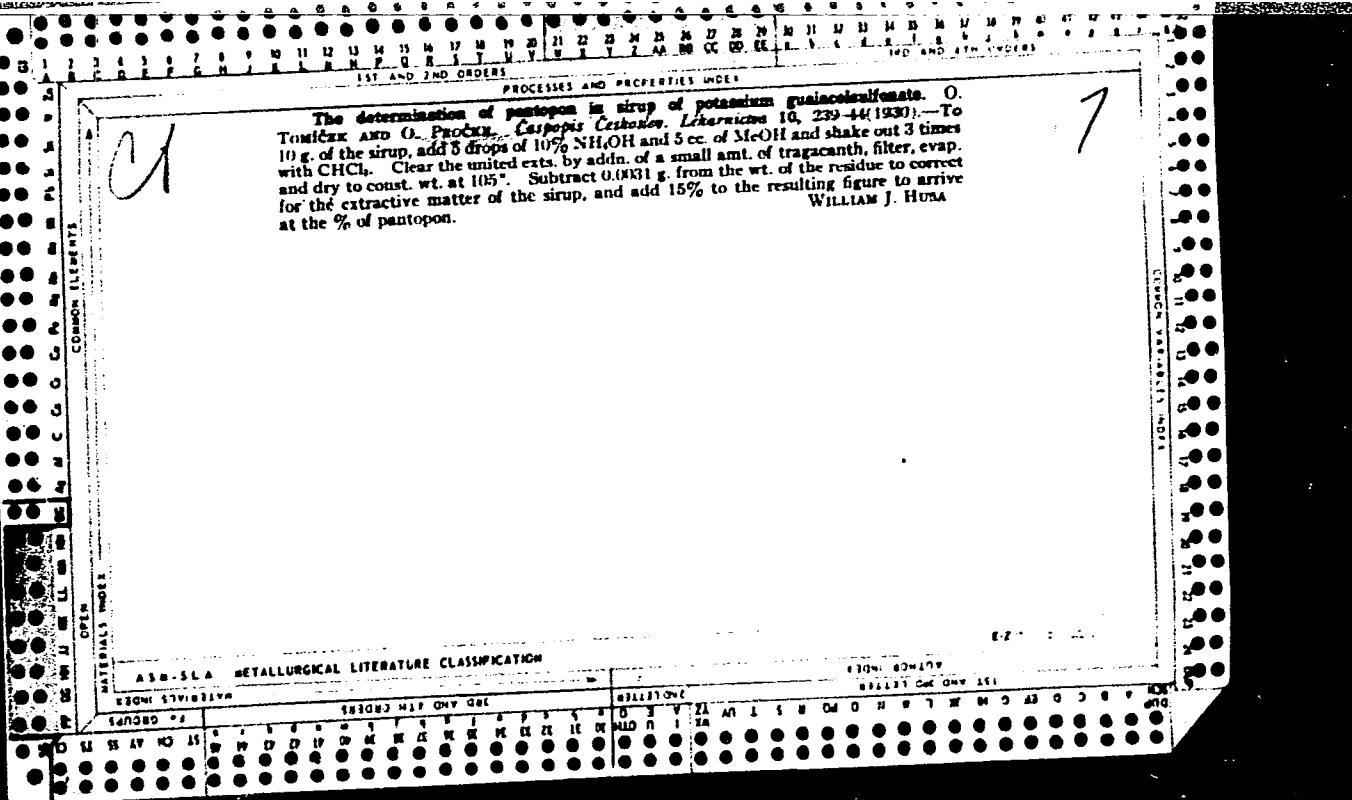


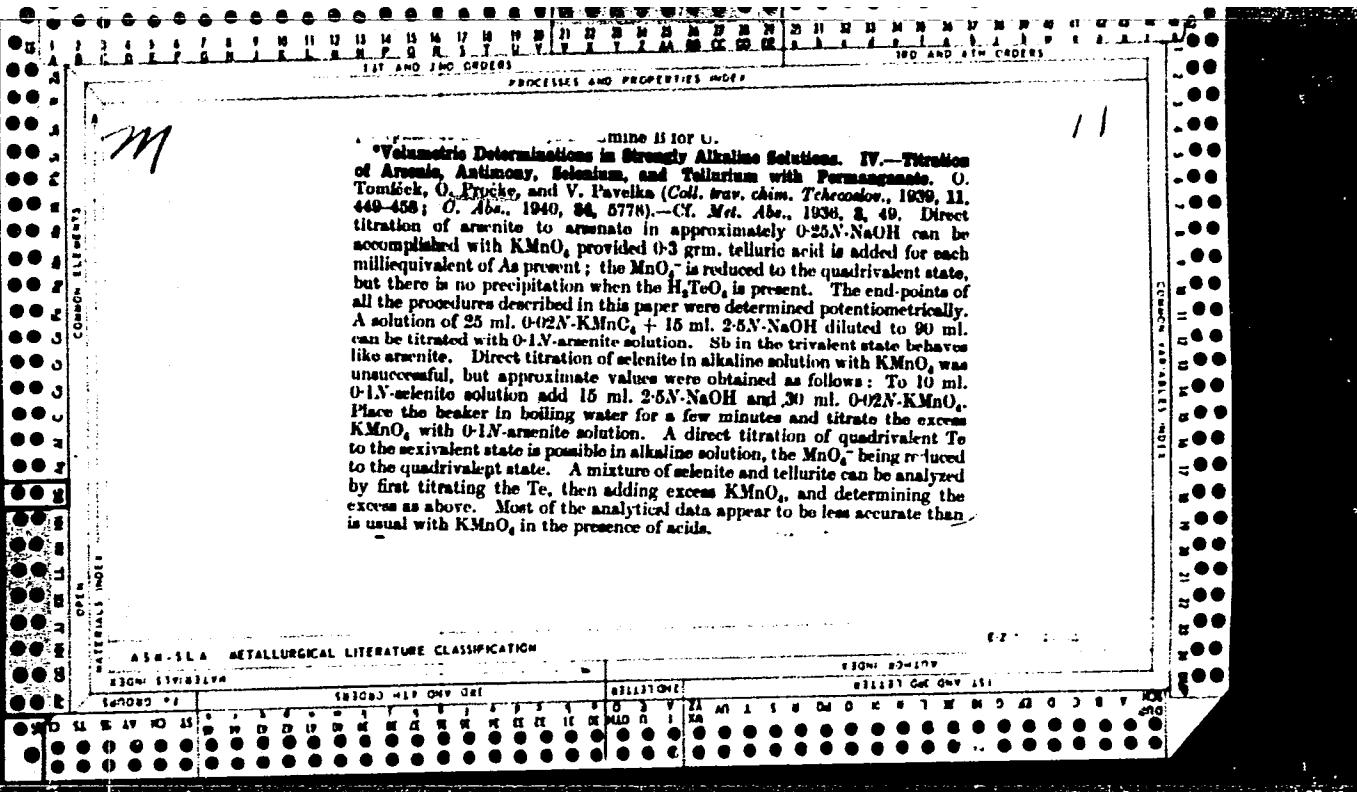
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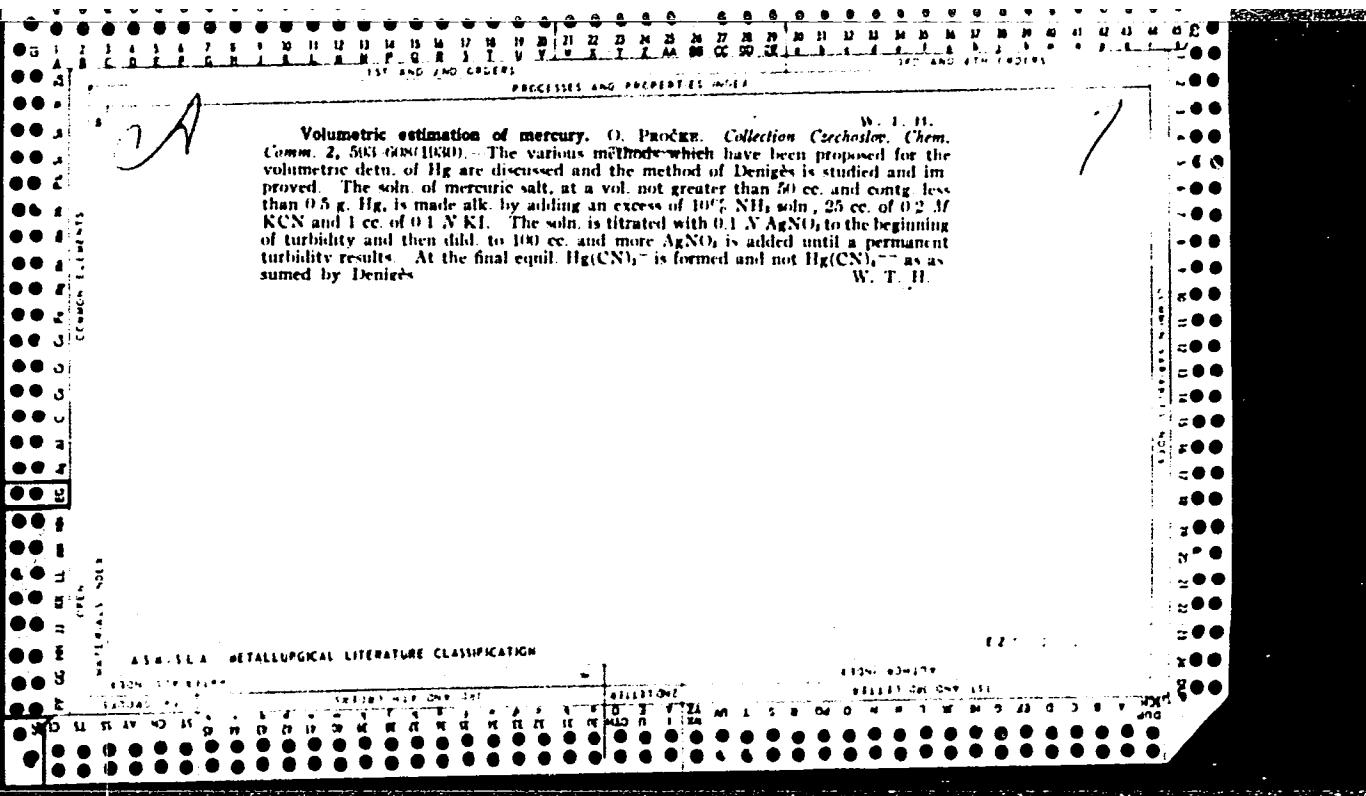
Mercurimetric studies. O. Tomík and O. Procházka. Collection Czechoslov. Chem. Comm., 3, 116-25(1931).—Votodek found that $\text{Na}_2\text{Fe}(\text{CN})_3(\text{NO}) \cdot 2\text{H}_2\text{O}$ could be used as indicator in titrating Cl^- and Br^- but not I^- with $\text{Hg}(\text{NO}_3)_2$. With respect to the solv. of the Hg nitroprussiate and the extent of its ionization, but little data are available. It would seem probable that the molar solv. is not greater than 2×10^{-4} and that its solv. product is below 10^{-9} . The physicochem studies here described lead to the same conclusion that the molar solv. is below 3×10^{-4} . Other observations made will be given a practical application in a subsequent paper.

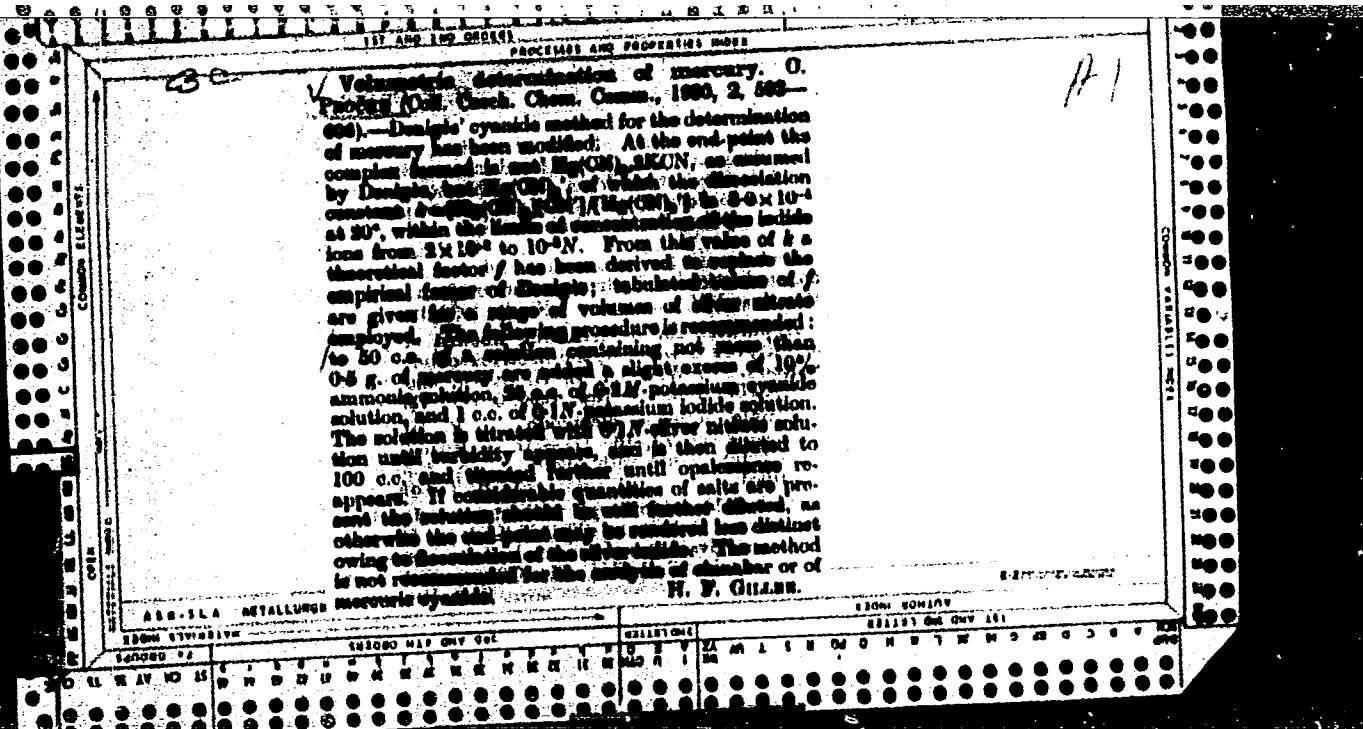
W. T. H.

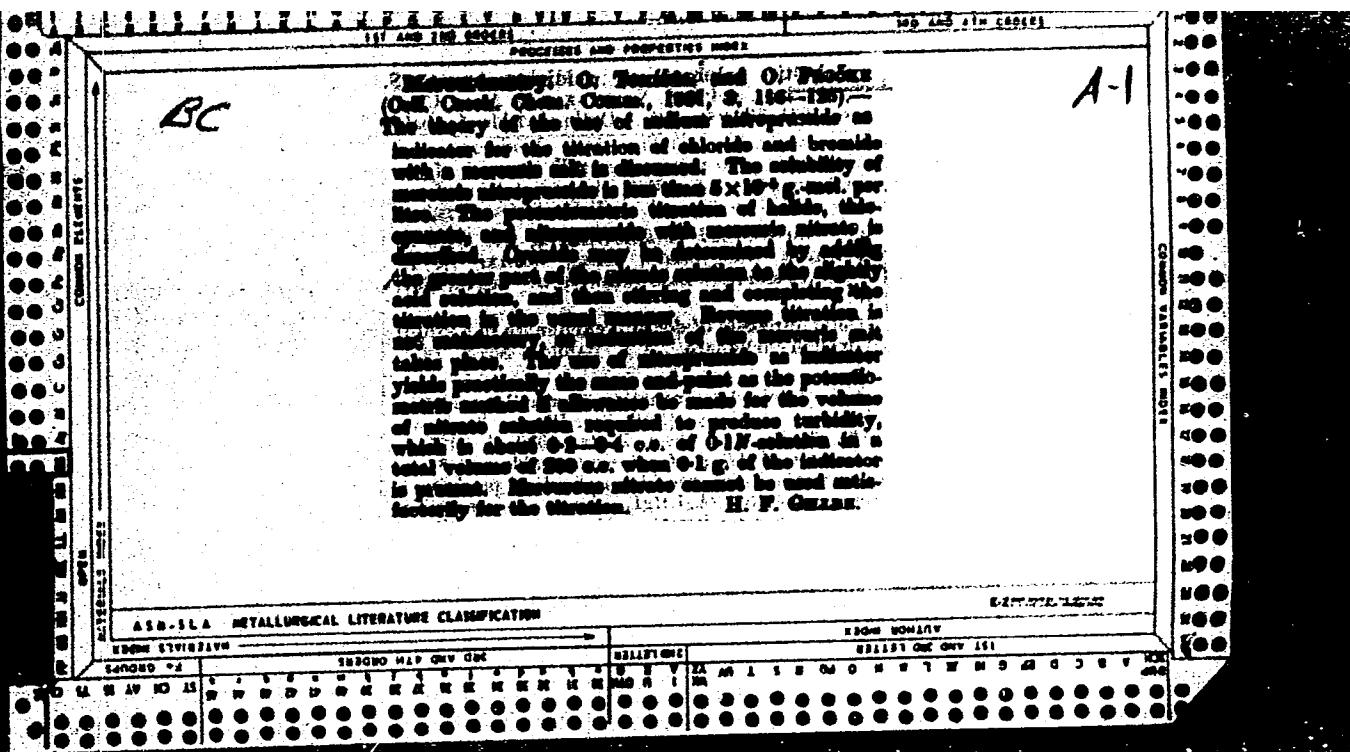
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PROCKL, L.

Social criticism of national standards. p. 427.
GEP, Budapest, Vol. 6, no. 2/3, Aug./Sept. 1954.

SO: Monthly List of East European Accessions, (EHAL), IC, Vol. 4, no. 10, Oct. 1955,
Uncl.

PROCKL, Laszlo

The technical aid of the Soviet Union. Jarmu mezo gap 7
no.4:121 '60

1. Gepipari Tudomanyos Egyesulet fotitkarhelyettese.

"APPROVED FOR RELEASE: 06/15/2000

CIA-RDP86-00513R001343110017-0

PROCKL, Laszlo

Standardization. Jarmu mezo gep 8 no.1:37 Ja '61.

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PROCKL, Laszlo

Standardization. Jarmu mezo gep 8 no.3:116-117 Mr '61.

1. Gépipari Tudományos Egyesület fotitkar-helyettese.

PROCKL, Laszlo

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1. Gepipari Tudomanyos Egyesulet fotitkar-helyettese.

PROCKL, Laszlo

Standardization. Jarmu mezo gep 8 no.5:191-192 My '61.

1. Gepipari Tudomanyos Egyesulet fotitkar- helyettese.

PROCKL, Laszlo

Standardization. Jarmu mezo gep 8 no.7:269-272 J1 '61.

1. Gepipari Tudomanyos Egyesulet fotitkarhelyettese.

GAL, Odón; PROKLL, László

Magyar Tudományos Akadémia

News of the Scientific Association of the Machine Industry,
Gépgyártástechnika No. 9:359-362 7 '61.

1. Secretary General, Scientific Association of the Machine
Industry, and Editorial board member, "Gépgyártástechnika"
(for Gal). 2. Deputy Secretary General, Scientific Association
of the Machine Industry (for Prokll).

FROOKL, Laszlo

Technical examination of roller bearings. Gepgyartastackn
I no. 9:342-343 D '61.

1. Deputy Secretary General, Scientific Association of the
Machine Industry, Budapest.

PROCKL, Laszlo

Roller bearings - technical investigations. Gep 13 no. 5:199-[3]
of cover. My '61.

1. Fotitkarhelyettes, Gepipari Tudomanyos Egyesulet.

PROCKL, Laszlo

National committee meeting of the Scientific Association of the Machine Industry. Gep 13 no.12:454,479-482 D '61.

1. Fotitkarhelyettes, Gepipari Tudomanyos Egyesulet.

PROCKL, Laszlo

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1. Gepipari Tudomanyos Egyesulet fotitkarhelyettese.

PROCKL, Laszlo

"Rolling stock industry and manufacturing diesel locomotives."
Jarmu mezo gep 9 no.9:358-360 S '62.

1. Gepipari Tudomanyos Egyesulet fotitkarhelyettese.

PROCKL, Laszlo

Technical aid given by the Soviet Union. Gep 12 no.4:121
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1. A GTE fotitkarhelyettese.

PROCKO, P.

Forests and forestry in the Bulgarian People's Republic. p. 21

LAS POLSKI. (Ministerstwo Lesnictwa oraz Stowarzyszenie Naukowo-Techniczne
Inżynierów i Techników Leśnictwa i Drzewnictwa) Warszawa, Poland. Vol. 29,
no. 1, Jan. 1955

Monthly list of East European Accessions (EEAI) LC, Vol. 9, no. 2, Feb. 1960

Uncl.

RUMANIA

21

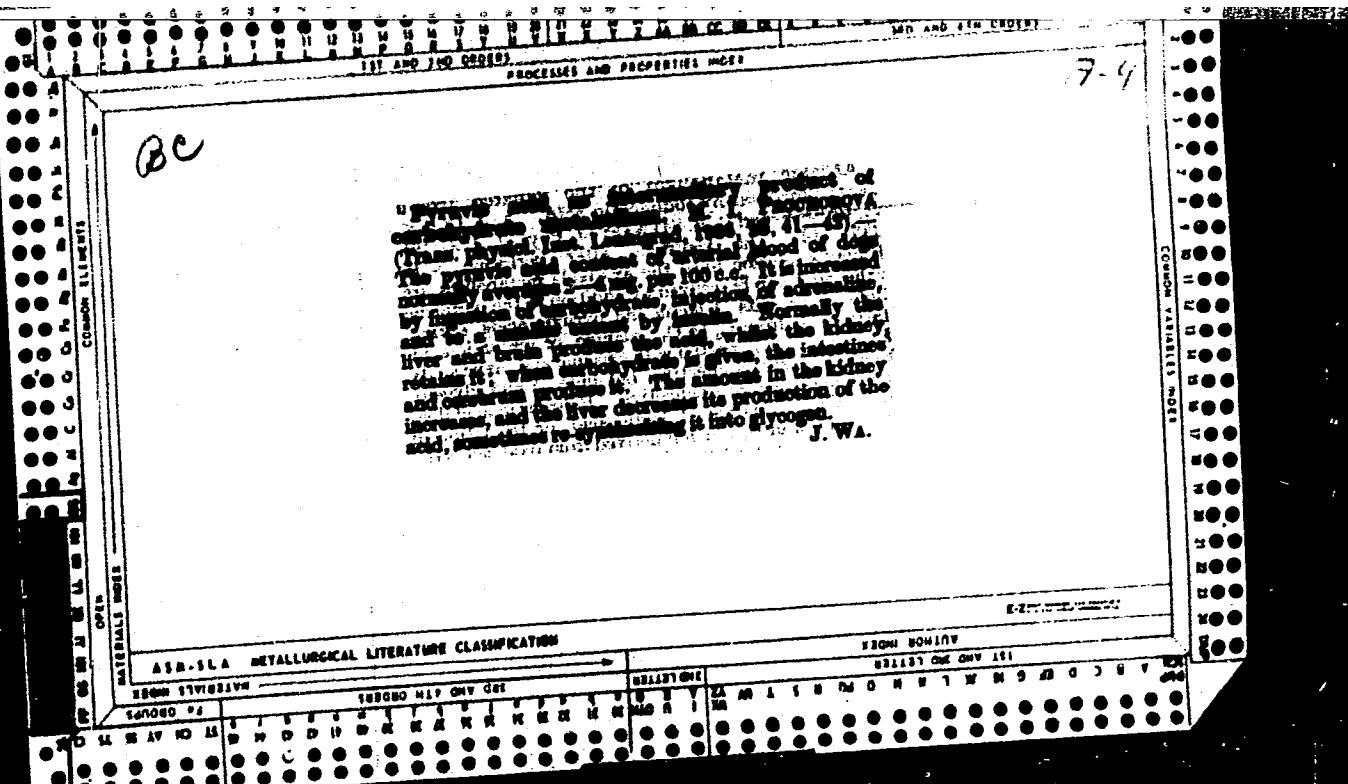
GAVRILA, I., Prof; PROCCOPAI, V., Dr

Contagious Illnesses Clinic of Cluj--Director: Prof I. Gavrila (Clinica de
Boli Contagioase din Cluj -- Director: Prof I. Gavrila) - (for both)

Bucharest, Viiata Medicala, No 10, 15 May 1963, pp 693-700

"Prevention and Treatment of Serum Accidents."

(2)



PROCKOWSKI, A.

Competition for breeding bacon hogs. p. 31

GOSPODARKA MIESNA. (Polskie Wydawnictwa Gospodarcze) Warszawa, Poland.
Vol. 11, no. 7/8, July/Aug. 1959

Monthly List of East European Accessions. (EEAI) LC, Vol. 9, no. 1, Jan. 1960

Uncl.

PROCZKOWSKI, A.

The formulation of the Breeding-Economic Commission in the Polish Union of
the Association of the Producers of Bacon and Ham Hogs. p. 31

GOSPODARKA MIESNA. (Polskie Wydawnictwa Gospodarcze) Warszawa, Poland.
Vol. 11, no. 7/8, July/Aug. 1959

Monthly List of East European Accessions. (EEAI) LC, Vol. 9, no. 1, Jan. 1960

Uncl.

PROCZKOWSKI, A.; GRUSZECKI, S.

The organization of the competition for bacon hogs. p. 34

GOSPODARKA MIESNA. (Polskie Wydawnictwa Gospodarcze) Warszawa, Poland.
Vol. 11, no. 7/8, July/Aug. 1959

Monthly List of East European Accessions. (EEAI) LC, Vol. 9, no. 1, Jan. 1960

Uncl.

PROKURYAKOV, A. K.

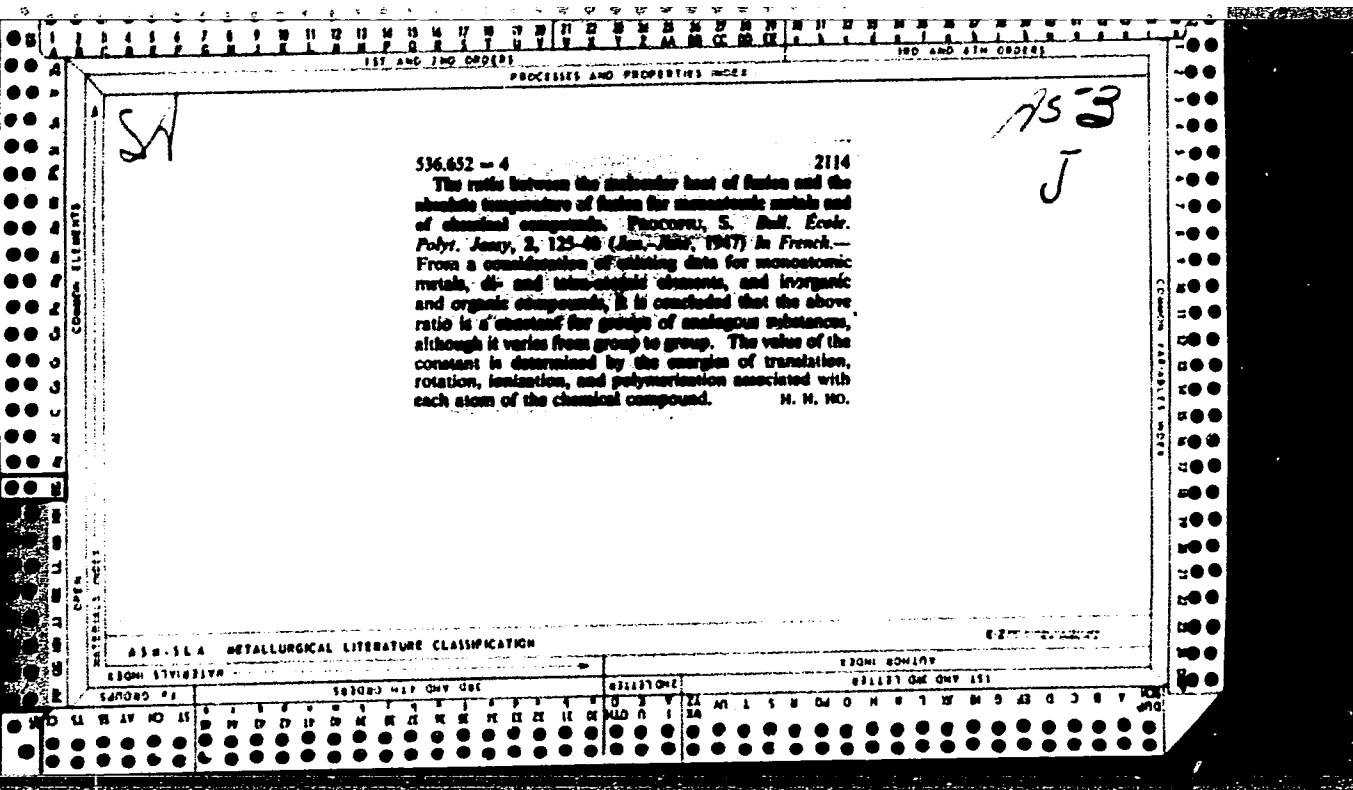
"Application of a Graphical Method to Computation of the Deformations of the Channel-Bed
Below Dams," No 3, pp 40-49.
(Meteorologiya i Gidrologiya, No 6 Nov/Dec 1947)

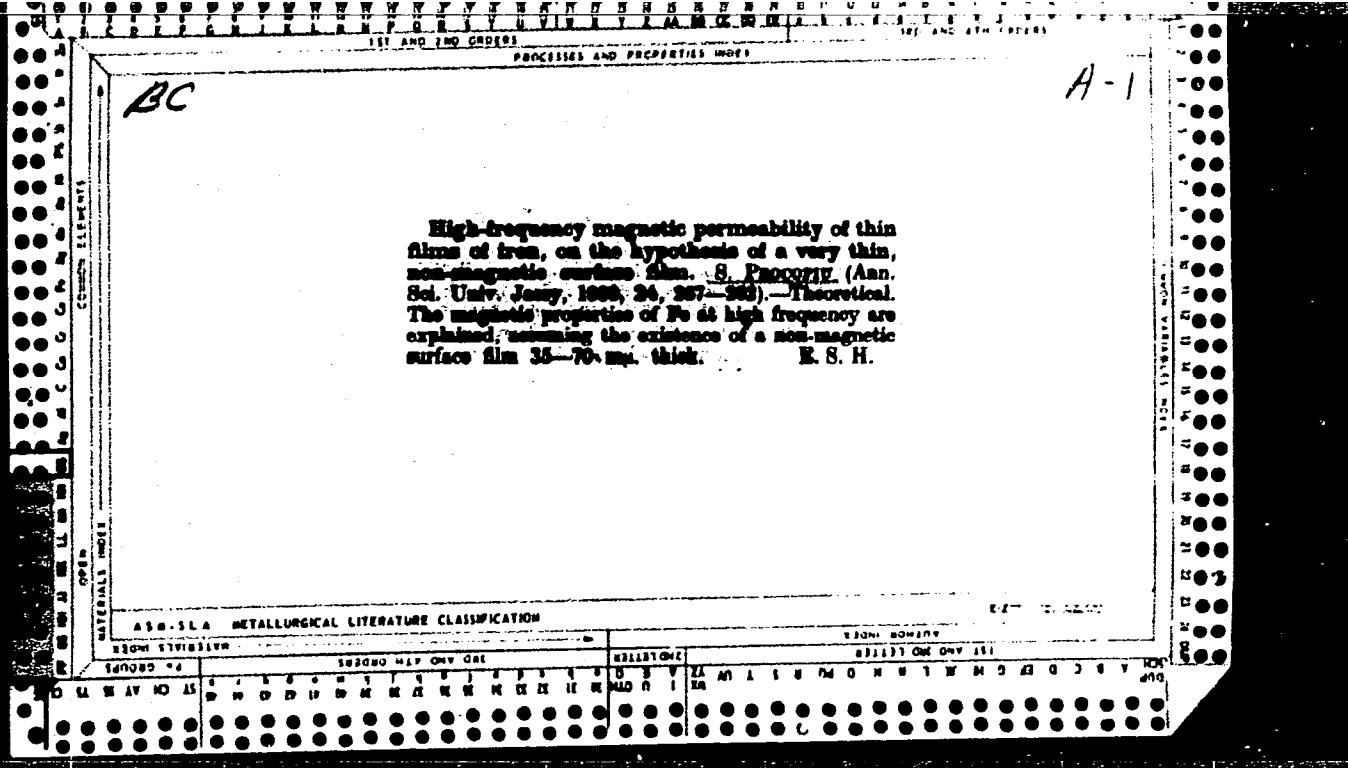
SO: U-3218, 3 Apr 1953

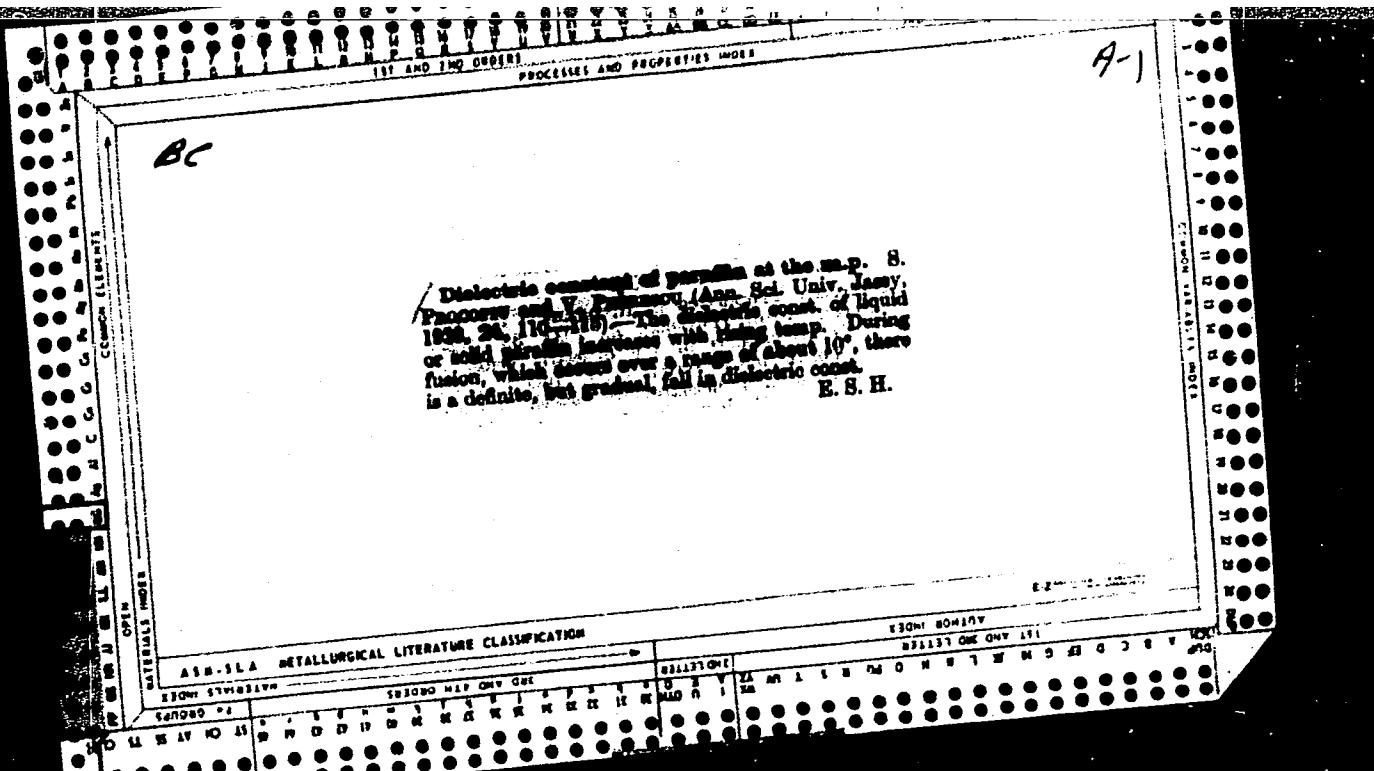
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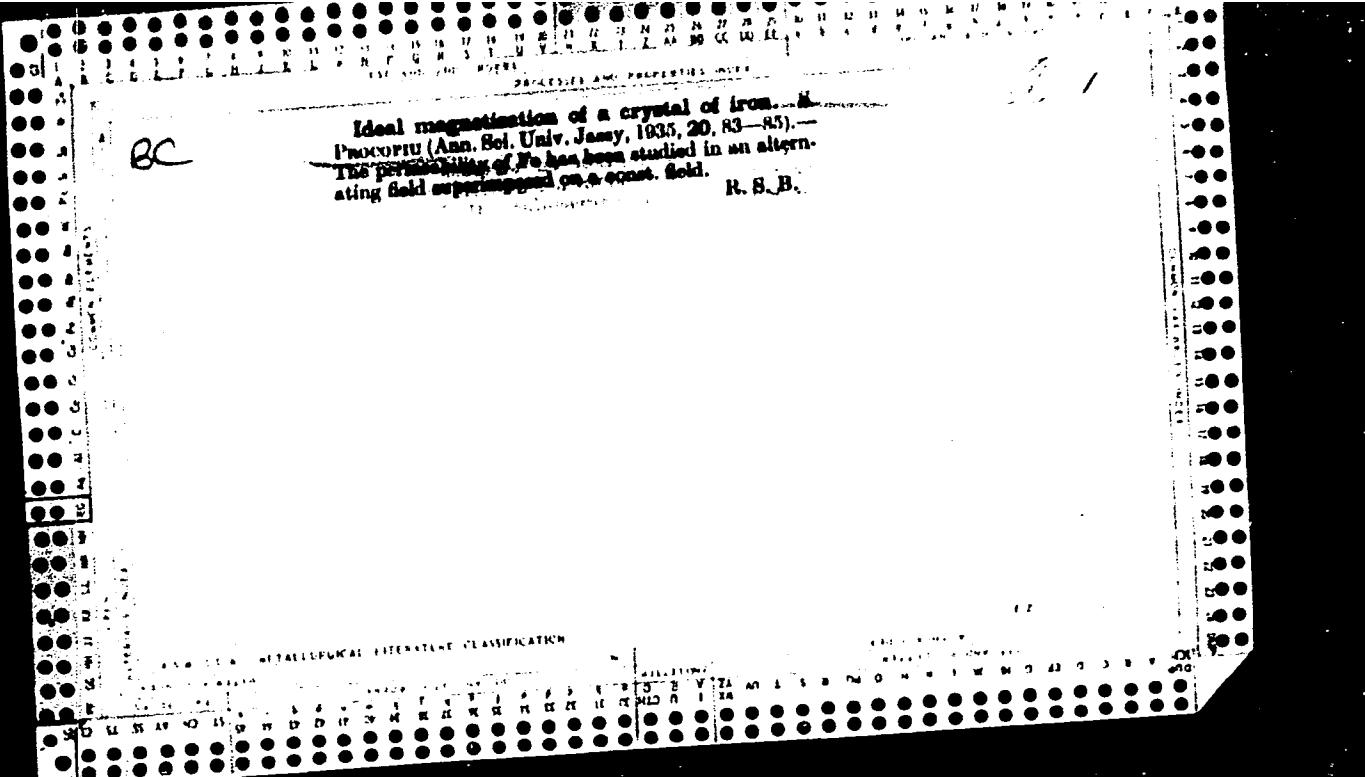
deja vu

1979. The service behaviour of low-fired runner bricks with a porosity of 28-35%—
A. M. PROCOPEVA and A. A. BAZZHENAYA (Ogneupory, 16, 549, 1981). Expts. with
sleeves with a porosity of 28-32% and ladle linings with a porosity of 25% or more gave
satisfactory results. The present article reports expts. on runner bricks fired at 1,000° C.
instead of the normal 1,250° C. It is concluded that, as plant tests have shown, the
products fired at 1,000° C. and having a porosity of 28-35% are thermally stable and
do not increase the content of non-metallic inclusions in steel. To obtain low-fired
runner bricks the firing should be at 800°-1,000° C. but with the normal firing duration.
(5 figs., 1 table.)









BC

2-1

Depolarisation of light by liquids holding
crystalline particles in suspension in relation to
the birefringence of these particles. N. IAGURKU
(Ann. Sci. Univ. Jassy, 1933, 17, 111-117).—The
depolarisation is due to the magnetic birefringence of
the particles. A proportionality relation between the
depolarisation and the no. of particles and their bire-
fringence has been developed theoretically and con-
firmed by experiment. This method may be used for
the determination of the magnetic birefringence of
colloid particles. J. W. S.

ASB-LLA METALLURGICAL LITERATURE CLASSIFICATION

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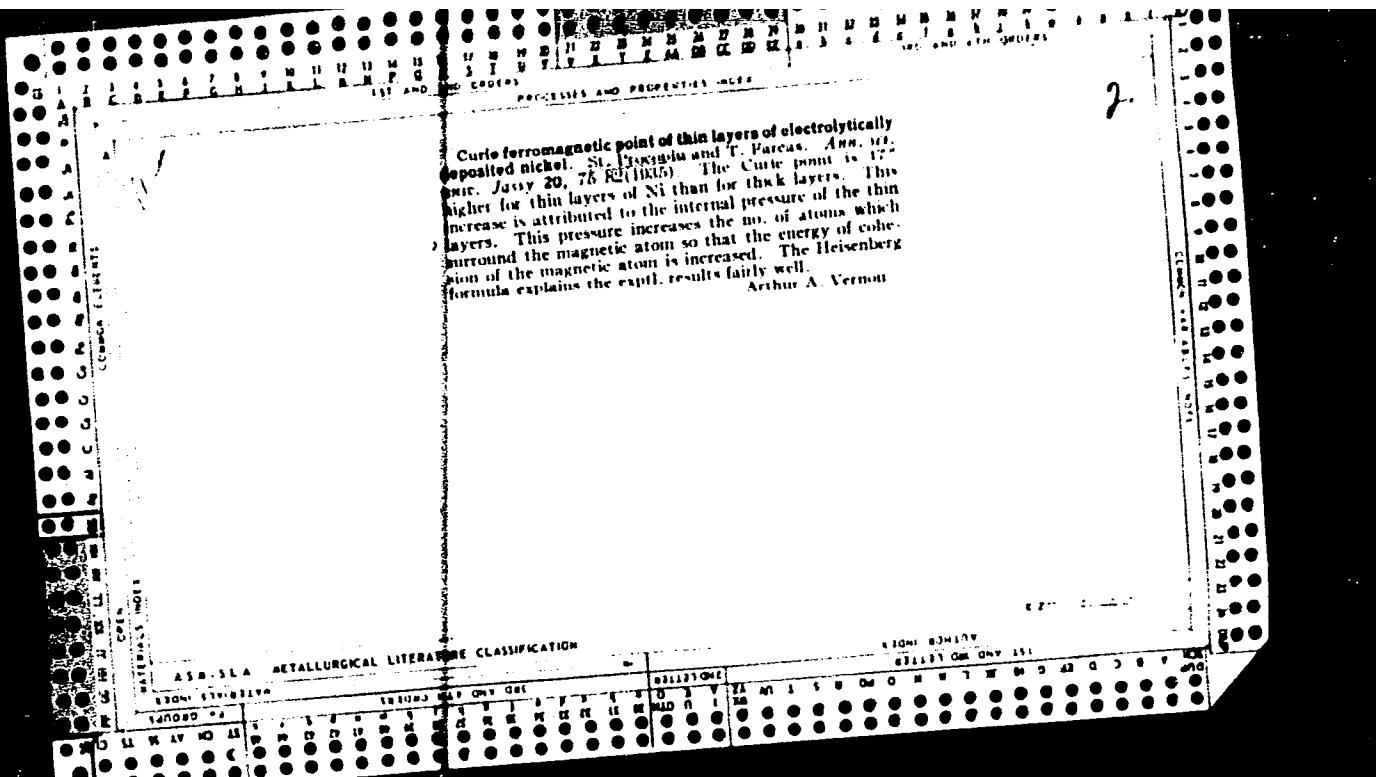
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The depolarization of light by liquids holding crystalline particles in suspension, in relation to the birefringence of the particles. Sr. Procopiu *Ann. de l'Institut Jarry* 17, 111-17 (1933) (in French); cf. C. A. 16, 21. — Depolarization (α) is independent of the liquid in which a cryst. solid is suspended, and depends on the magnetic birefringence (β), according to the equation $\alpha = \beta - 0.7$. The proportionality between the birefringence of the particles, their no., and the depolarization of light, was established theoretically and verified by expt. This relation permits deterg. the birefringence of colloidal particles by measuring the depolarization of light that passes through the
GERALD M. PERRY
collodial soln.

ABSTRACT METALLURGICAL LITERATURE CLASSIFICATION

SEARCHED INDEXED

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M

Curie Ferromagnetic Point of Thin Layers of Electrolytically Deposited Nickel. St. Procopiu and T. Farcaș (*Ann. Ser. Univ. Jassy*, 1935, **30**, 75-82; *C. Abs.*, 1936, **30**, 2438).—The Curie point is 17° higher for thin layers of nickel than for thick layers. This increase is attributed to the internal pressure of the thin layers. This pressure increases the number of atoms which surround the magnetic atom so that the energy of cohesion of the magnetic atom is increased. The Heisenberg formula explains the experimental results fairly well.—S. G.

ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION

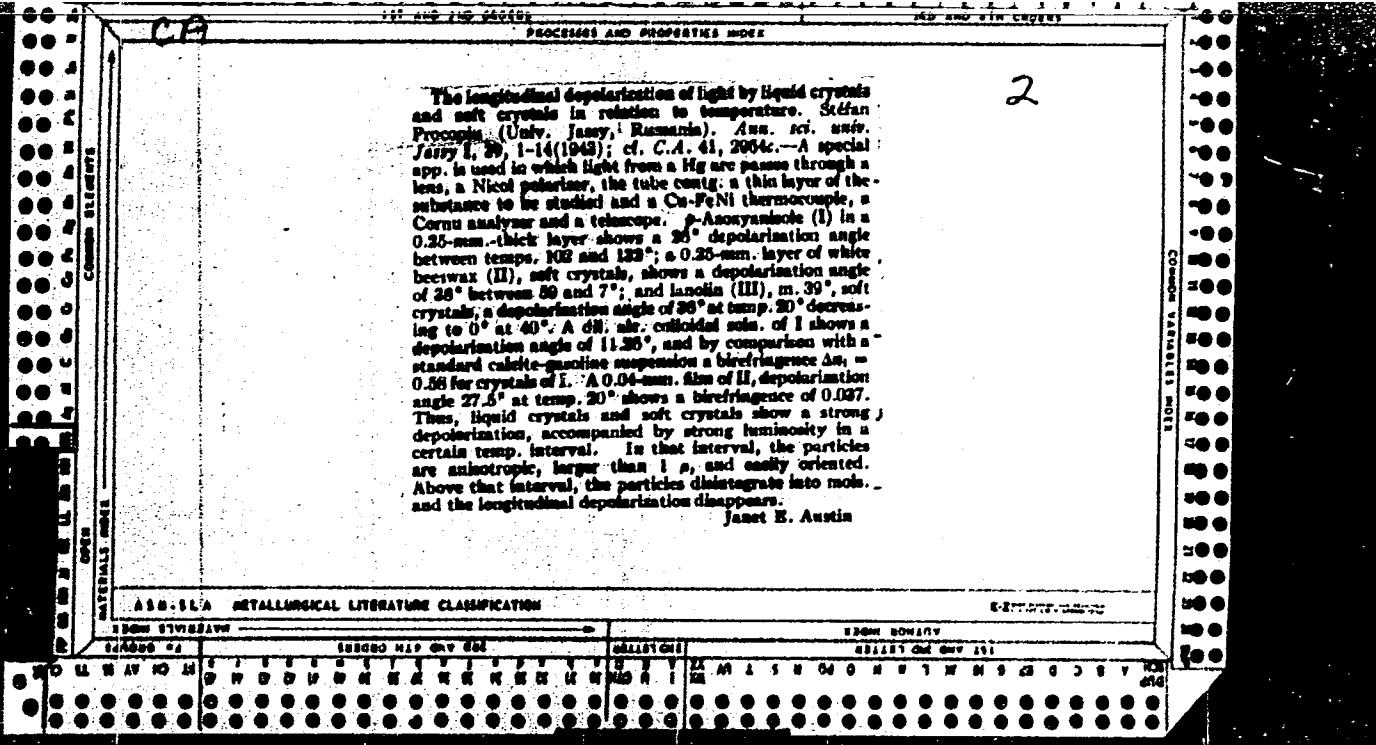
SEARCH SYMBOLS		COLLECTIONS		SEARCH SYMBOLS	
1	2	3	4	5	6

CP

9

Study of the cementation of iron by means of the potential of cemented iron quenched in acidulated water.
Stefan Proppiu, Ann. sci. univ. Jassy, Sect. I, 26, 300-24
(1940); cf. C. A., 34, 2759.
—Fe thus prepd. is more pos. than pure Fe. The e. m. f. obtained in a cell thus constituted is about 0.028 v. if the temp. of the Fe in the furnace has been held below the cementation temp. and about 0.064 v. if above. The thickness of the cementation can be detd. from the progress of the potential of a cemented Fe electrode in acidulated water (10% H₂SO₄), the potential of which is from -0.228 to -0.210 v. with respect to the H electrode. When the cemented layer all dissolves the potential changes abruptly to the value for pure Fe. The loss in wt. of the electrode is used in detg. the thickness of the layer dissolved during this time. It is found by this method that the thickness of the layer penetrated by C is proportional to the time spent in the furnace, and depends on the cementation temp.
S. L. Gerhard

ASME-A-1 RETAILLUGICAL LITERATURE CLASSIFICATION



2

Longitudinal depolarization of light by suspensions of starch. Stefan Dumitrescu (Univ. Jassy, Romania). Ann. Sci. Univ. Jassy I, 39, 18-18(1943); cf. preceding abstract. - Cryst. amylose formed by heating an ext. of potato starch in 80% alc.-H₂O for 4 to 5 hrs. shows no longitudinal depolarization although anisotropic, probably because the particles are smaller than 1μ.

Janet H. Austin.

ABE-LLA METALLURGICAL LITERATURE CLASSIFICATION

100M 51000000000

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100M 50000000000

10000000000

100M 50000000000

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PROCOPIU, Stefan, acad.; VISCRIAN, Ioan

Magnetizing intensities on steel and electrolytic iron threads
in a circular and longitudinal alternate field; effect of the
Barkhausen circular. Studii fiz tehn Iasi 14 no.1:13-36 '63.

PROCC RII STEFAN

RUMANIA/Physical Chemistry. General Division, Methodology, History. B-1
Scientific Institutions and Conferences, Teaching,
Problems of Bibliography and Scientific Documentation.

Abs Jour : Ref Zhur - Khimiya, No 8, 1957, 25689

Author : Stefan Procopiu

Inst : Academy of People's Republic of Rumania

Title : Determination of Electron Magnetic Moment by Electric Conductivity of Gas at High Frequency Discharge under Influence of Constant Magnetic Field.

Orig Pub : Studii si cercetari stiint., Acad. RPR. Fil Jasi Ser. I,
1954, 5, No 3-4, 99-112.

Abstract : The author proposes a resonance method of determination of the magnetic moment of a free electron. A constant magnetic field is superposed on an electron beam along the beam axis simultaneously with an alternating magnetic field perpendicular to the constant one. At some magnitude of the intensity of the constant field, there is resonance between the

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- 1 -

RUMANIA/Physical Chemistry. General Division. Methodology. History. B-1
Scientific Institutions and Conferences. Teaching.
Problems of Bibliography and Scientific Documentation.

Abs Jour : Ref Zhur - Khimiya, No 8, 1957, 25689

Abstract : electrons and the alternating field, in consequence of which the conductivity of the electron beam passes through a maximum. Magnetic moments of particles in the discharge were computed.

Card : 2/2

- 2 -

Procopiu, St.

Rumania/Physics of the Earth - Electric and Magnetic Field of the Earth, 0-4

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 36409

Author: Procopiu, St.

Institution: Univ. din Iasi, Iasi, Rumania

Title: Magnetic Moment of the Earth's Sphere Began to Increase

Original

Periodical: Bul. stiint. Acad. R. P. Romine. Sec. met. si fiz., 1955, 7, No 4,
1063-1093; Rumanian; Russian and French resumés

Abstract: From the result of mathematical analysis of the geomagnetic field
it is known that the magnetic moment of the earth M , starting with
1843, has been continuously diminishing for approximately 100 years.
An examination of the data of the recent years (see Referat Zhur -
Fizika, 1955, 20870) has shown that in the 30's or in the 40's of
this century M began to increase. The author calculates M with the
aid of the Bauer constant G which makes it possible to judge the
variation of M from changes of H and Z in individual points. The
values of G are given for 60 observatories, located in different

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CIA-RDP86-00513R001343110017-0

Rumania/Physics of the Earth - Electric and Magnetic Field of the Earth, 0-4

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 36409

Abstract: parts of the earth. These data confirm the increase of M during the period from 1932 through 1940. However, the increase in G has not occurred simultaneously at all observatories; the minimum G at equatorial stations was observed in 1906 or even earlier; at stations located at a latitude of approximately 45° it was observed in 1932, and in high-latitude stations it was observed in 1940 and later. In 5 northern and 6 southern observatories G still continues to diminish. The observed annual variation of the minimum G is in the form of a hyperbolic branching. Both branches merge at the equator approximately in 1900. As a result of detailed analysis of the spatial and time fluctuations of G the author concludes that the value of M, calculated from the data of the local constant in 39 observatories, began to increase within the time interval between 1932 and 1940.

Card 2/2

PROCOPIU, St., acad.

On the 15th anniversary of the Rumanian Academy. Studii
fiz tehn Iasi 14 no.2:259-261 '63.

PROCOPIU, Stefan, acad.; PAPP, Alexandru

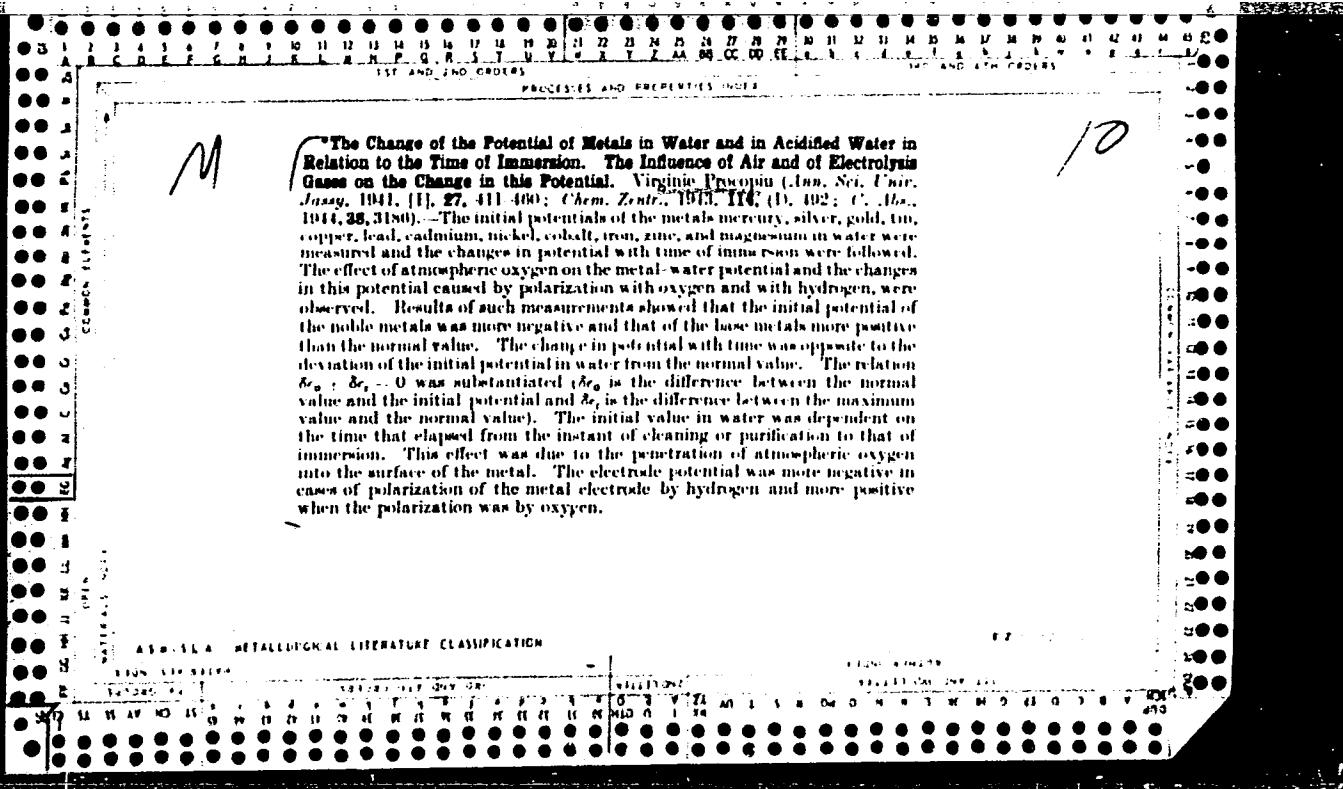
Determination of the Bohr-Procopiu magneton value from measurements carried out with the aid of a resonance method on a pencil of free electrons which are displacing:
1. in ionized air, 2. in vacuum under the action of a constant longitudinal magnetic field and a radio-frequency transversal field. Studii fiz tehn Iasi 14 no.2:267-284 '63.

1. Laboratory of Electricity and Laboratory of Radio engineering of the "Al. I. Cuza" University, Iasi.

PROCOPIU, Stefan, acad.; VISCRIAN, Ioan

Study of the traction influence on the magnetic characteristics
of electrolytic iron wire in circular and longitudinal alternating
magnetic field. Studii fiz tehn Iasi 14 no.2:285-306 '63.

Study on the magnetomechanical Phenomena of the nickel wire
in a circular and longitudinal alternating magnetic field.
Ibid.:307-340



"APPROVED FOR RELEASE: 06/15/2000

CIA-RDP86-00513R001343110017-0

PAVELESCU, D.; ILIUC, I.; BARBUL, S.; PROCOPOVICI, E.; NASTASE, M.;
CONSTANTINESCU, V.

A method of studying wear of bearings with radioisotopes.
Studii cerc nec apl 11 no.6:1397-1410 '60.

APPROVED FOR RELEASE: 06/15/2000

CIA-RDP86-00513R001343110017-0"

DUMITRESCU, L; JAKAB, I.; PROCOPOVICI, E.

Problems of the experimental research on the aerodynamics
of high speed by means of shock tubes. Studii cerc nec apl
11 no.6:1599-1608 '60.

R/008/60/000/006/008/008
A231/A126

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26096

AUTHORS: Dumitrescu, L.; Jakab, I.; Procopavici, E.; Zaharescu, A.

TITLE: Some problems of experimental investigations of high-speed aerodynamics in the shock tube

PERIODICAL: Studii și cercetări de mecanică aplicată, no. 6, 1960, 1,599 - 1,608

TEXT: The article briefly reviews the shock tube of the Institutul de mecanică aplicată "Traian Vuia" (Institute of Applied Mechanics) of the Academy RPR (Rumanian Academy). The institute conducts research in connection with the accomplishment and exploitation of shock tubes since 1956. The requirements for the construction of the shock tube and measuring instruments were based on the idea of using the shock tube for the production of a high-speed quasi-stationary air stream. The operating principle and the operational results have already been described in Ref. 6 [L. Dumitrescu: Tubul de soc și aplicațiile sale. Studii și cercetări de mecanică aplicată, VII, 1 (1955)] and Ref. 2 [L. Dumitrescu: Tubul de soc pentru cercetări de aerodinamică. Studii și cercetări de mecanică aplicată, X, 1 (1959)]. Behind the shock wave propagating along the tube there are produced two quasi-stationary flow fields of two different Mach Number M and

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Some problems of experimental investigations of....

M₂. The tube has a total length of 11 m consisting of twelve 840 mm and two 450 mm stumps. Their position can be modified to realize every configuration of the tube. The sectional dimension of the tube is 300 x 190 mm. It is provided with a vacuum pump of 1.7 kw and a residual vacuum of 0.3 mm Hg, and a 0.7 kw air compressor supplying 7 atm. These installations supply a maximum vacuum of 2 mm Hg and a maximum pressure of 6 atm, corresponding to a maximum theoretical Mach Number of M = 1.45 and M₂ = 5.37. The main problem consists in an adequate measuring of the aerodynamic parameter. The shock tube was designed to guarantee an average operating time of 5 - 10 milliseconds. In order to use the shock tube for qualitative research, it became necessary to work out methods of measuring the aerodynamic parameters with a short response time which should represent a fraction of the above-mentioned minimum operation time. In order to accomplish the measurement of a great number of physical parameters, the shock tube was equipped with the following installations: a) Apparatus for measuring the initial static parameters of the air in the shock tube; b) control relay with controllable retarding for the connection of the measuring instruments and spot illuminating devices; c) installation for measuring the propagation velocity along the shock tube; d) installation for measuring the aerodynamic pressure distribution in the shock tube and on the model; e) aerodynamic scale for measuring the

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